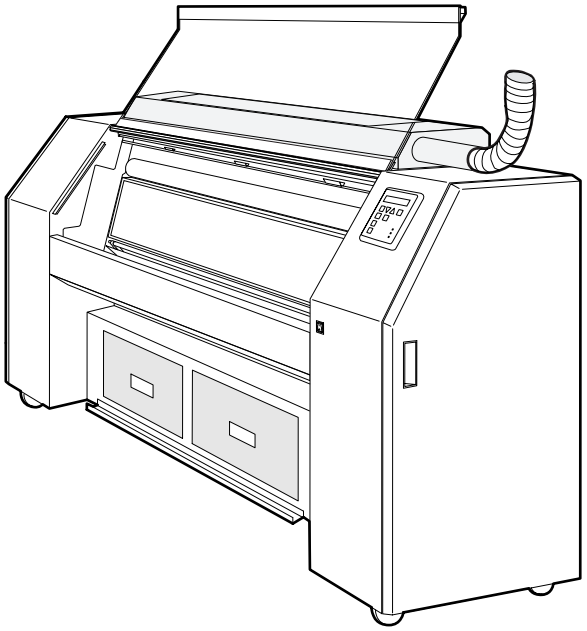
RASTERGRAPHICS

Arizona

Digital Screen Press

User's Guide

309 dpi Industrial-strength Large-Format Production Ink Jet Printing System for Outdoor Applications



Revision: A	Date: May 2001	P/N: 3001-0001	Binder P/N: 2201-0055

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Output may vary depending on type of print data/file, application, media, environmental conditions, print speed, or other variables. Many of these variables are under the control of the operator, to optimize production and output quality requirements. Only consumables purchased from Raster Graphics or one of its authorized distributors, and designated for use in the Arizona DSP. Outdoor warranty subject to terms and conditions provided by 3M Commercial Graphics Division.

Document History

Date	Release	Part number	Revision	Revised by
July 2000	Production	3001-0001	A	Eng. Services/Tech Pubs.

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Product Conformity

Manufacturer's Name:

Gretag-Raster Graphics

Manufacturer's Address:

3025 Orchard Parkway
San Jose, California 95134
USA

Declares that the product:

Product Name: Arizona Digital Screen Press

Model Number: 3000-5029

Conforms to the following EC Directives and harmonized standards:

Contact: 1-800-456-3473 (From 6 a.m. to 5 p.m. PST)

WARRANTY

The Arizona DSP comes with a 90 day on site warranty covering parts and labor for the complete printer. The print heads are warranted for an additional 90 days [total of six (6) months or sixty thousand (60,000) linear feet] whichever comes first. The warranty period commences on the date of installation by a Raster Graphics authorized field engineer.

The Arizona DSP is also warranted against failure to meet Raster Graphics' published specifications, as described in ***Table 1-1***, where such failure substantially affects performance of the Arizona DSP. This warrant is contingent upon proper use, and does not cover the Arizona DSP printers that have been modified without prior approval from Raster Graphics Inc., or that have been subjected to unusual physical or electrical stress or other environmental prohibitions.

ANNUAL MAINTENANCE AGREEMENT

Raster Graphics offers several Annual Maintenance Agreements to best meet your business requirements. Please contact Raster Graphics Customer Service at 1-800-456-3473 for more information. Raster Graphics recommends the purchase of an Annual Maintenance Agreement. It covers all labor and material costs and travel expense to your installation site if your Arizona DSP requires repair. It also includes two preventative maintenance service calls per year. The Annual Maintenance Agreement ensures optimum performance, the highest quality prints, and highest reliability.

The Supplies used in the Arizona DSP must meet Raster Graphics qualifications and must be purchased from Raster Graphics, 3M Commercial Graphics, or an authorized agent of either company. The use of any unauthorized ink and/or media will not be supported by either Raster Graphics or 3M, and may invalidate the Arizona DSP warranty and/or Maintenance Agreement; in which case Raster Graphics reserves the right to charge the customer to restore the printer to the operating condition in which it left the factory.

The Annual Maintenance Agreement may be purchased during the initial warranty period, or renewed on or before the warranty or Annual Maintenance Agreement expiration date. However, if the original warranty or Annual Maintenance Agreement has expired before you purchase or renew an Annual Maintenance Agreement, a site inspection is required as a condition of maintenance purchase or renewal. This inspection may include material, labor charge, and travel, paid at your expense, to restore the Arizona DSP to specifications.

ORDERING PRINTER SUPPLIES

Gretag-Raster Graphics (RGI) works closely with the manufacturers of imaging media to characterize the properties that work best in Ink and media used by RGI printers. RGI supplies are extensively tested in our laboratory before being approved for shipment to our customers. Listed below are the printer supply phone and fax numbers for ordering new media and ink. The appropriate Customer Service numbers and web site addresses of RGI and 3M are also provided for your convenience.

Order Phone & Fax Numbers:

Raster Graphics Ink Supplies & Media
- Toll Free: 1-888-744-5585
- Tel: 1-408-232-4000
- Fax: 1-408-220-1426

3M Commercial Graphics Division Media Supplies
- Toll Free: 1-800-374-6772
- Fax-on-Demand: 1-800-364-0768

Customer Service Phone & Fax Numbers:

Raster Graphics
- Toll Free: 1-800-456-3473 (From 6 a.m. to 5 p.m. PST)

3M Commercial Graphics Division
- Toll Free: 1-800-328-3908
- Fax-on-Demand: 1-800-364-0768

For a Description of Supplies:

Raster Graphics
- http://www.rgi.com/

3M Commercial Graphics Division
- http://www.3M.com/imagegraphics

Chapter 1: Getting Started

Using this Guide

Each left page of this manual (like this one) describes a single topic. Each right page shows tables or figures that point out the hardware and procedures referenced in the text. You can read this manual in sequence to gain an understanding of the Arizona DSP. You can also look up specific topics in the table of contents or you can look up key words in the index.

Inkjet Technology & the Arizona DSP

Inkjet is a non-impact technology which uses drops of ink to form images. The ink source never touches the paper and are thus classified as "line" printers, i.e. the print head moves back and forth printing one line at a time. On each pass the print heads "jet" a micro-thin stream of ink dots at the media.

There are two main ways to generate these dots, Thermal/Bubble and Drop-on-Demand Piezoelectric Crystal method. Thermal ink droplets are produced by rapid heating of the ink to "percolate" a droplet out of the nozzle to form a pixel. Piezoelectric Crystal is a transducer that changes shape when electrically stimulated. With the Raster Graphics Arizona DSP, when electricity is applied to the piezo crystals or PZT material of the inkjet print head, the nozzle walls flex, squeezing the ink inside out and onto the media.

A Revolution in Large-Format Production Printing

The Arizona DSP printer from Raster Graphics represents a revolution in large-format production printing. This roll-to-roll, 6 color, piezoelectric printing system satisfies the market's need to produce short to medium runs of graphics with outdoor, UV durability, that do not require an overlaminate, at costs comparable to traditional screen printing. That means that customers who might typically screen print runs of up to 150 pieces, incurring the cost of film and labor, can now print directly onto 3M screen printing vinyls to produce ready-to-use digital graphics at a fraction of the overall cost of either screen printing or traditional LFDP. Applications possibilities for the printer include reflective and backlit signage, banners, and long-term interior graphics.

Technology

The printer uses 3M™ Scotchcal™ Piezo Ink Jet Inks Series 3700 solvent-based inks in a roll-to-roll production piezoelectric printing system. The inks are dried before being rolled onto the takeup spool through the utilization of a forced air and quartz element heating system (heater), also known as the drying lamp or heat lamp. The combination of heat and air evaporates (dries) the solvents before the finished graphics are rolled onto the takeup spool. The quartz element is encased in a two piece aluminum sheath. For maximum operator safety, the positioning and direction of the heating element eliminates the possibility of the operator coming into contact with the element. This innovative drying system allows the printer to operate at a speed of 90 sq. ft./hour, continuously spooling the finished, dried graphics onto the takeup spool.

Arizona DSP printing technology employs three print heads per color for a total of 384 nozzles per color enabling the printer to print at production speeds. The color order on the print head carriage from top to bottom begins with yellow followed by light magenta, magenta, light cyan, cyan and black as shown in ***Figure 1-1***, Carriage Color Order. Each print head has 128 nozzles that actually squeeze the ink out through small holes near the surface of media, see ***Figure 1-2***, Head Cross Section. The print head nozzles are extremely delicate and require a special maintenance procedure found at the back of this guide. The actual print heads consist of several parts working in unison to deliver ink to approved media as shown in ***Figure 1-3***, Print Head Breakup,

Because the inks from 3M contain certain solvents which can cause unpleasant odors or fumes, the printer is fully enclosed to ensure minimal operator exposure. By fully enclosing the working parts of the machine, fumes and unpleasant solvent odors are removed from the operator environment. Blowers located in a manifold located at the top of the machine force fumes through a vent where a standard, user supplied, 4 inch diameter hose carries the fumes out of the building through external venting or through a carbon filter.

During bidirectional printing, the carriage assembly prints in both the left and right directions. During unidirectional printing, the carriage assembly prints from the left to right direction and has been determined to create the best piezo prints for on-demand printing of posters, banners, signage, exhibit graphics, etc.

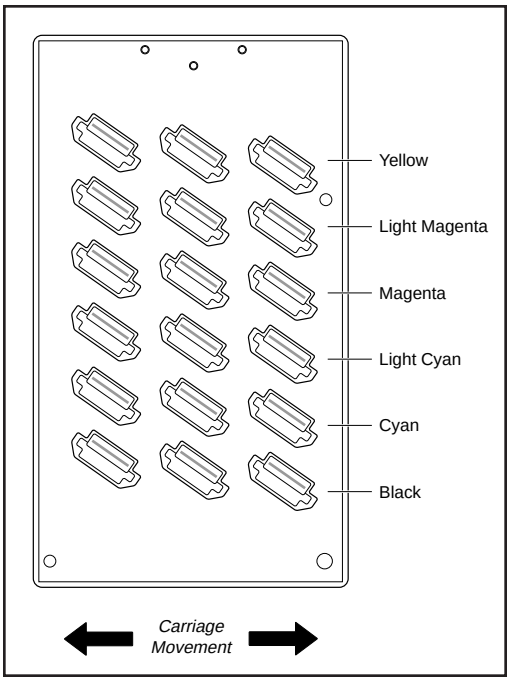


Figure 1-1 Carriage Color Order

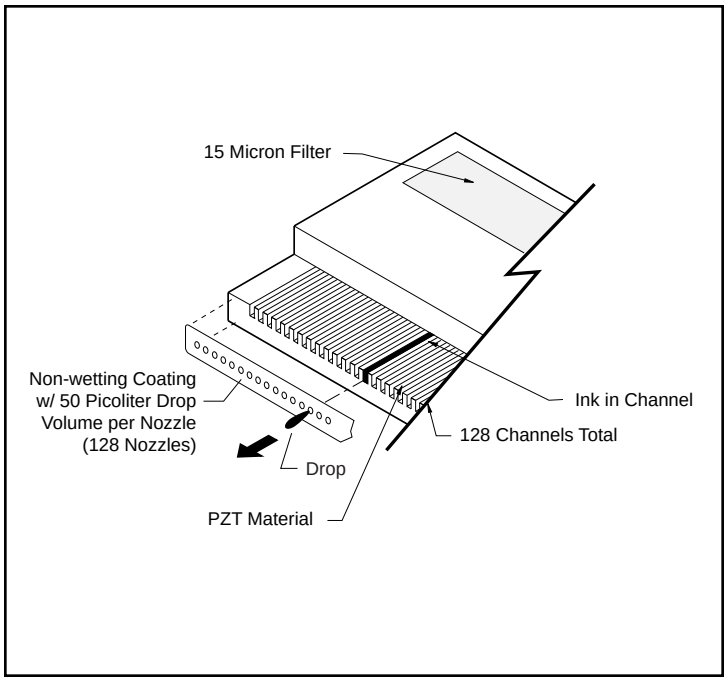


Figure 1-2 Head Cross Section

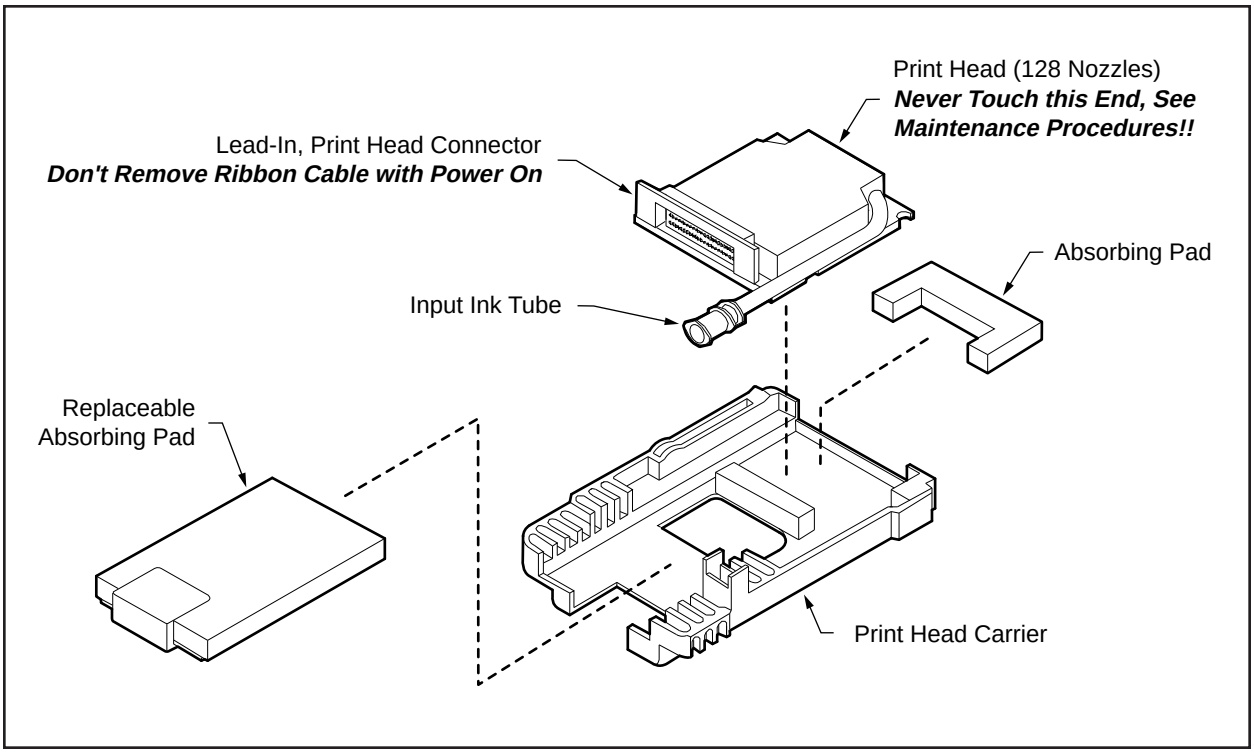


Figure 1-3 Print Head Breakup

Piezo printing technology provides a greater reliability of color consistency because it is not susceptible to heat buildup common in thermal inkjet technology, which can cause perceptible color shifts from print to print, or within the same print. In addition, piezo print heads last longer than thermal heads, providing increased printer reliability and translating into greater uptime.

Optimization of media and ink limiting with PosterShop® software will reduce image defects that appear during a print job. Below is a brief description of those artifacts:

Banding:
Difference in print density between passes

Cockle/cockling:
Distortion of the media through absorption of a liquid

Puddle/puddling:
A pool of ink. Use ink limiting through host software to control the amount of ink for a given area, method of fixing puddling

Ink Limiting:

Cracking:
Shrinking of the ink while drying

Misting:
Small specs of ink can be seen around ink drop on media

Tailing:
Ink drop forms a tail after leaving nozzle and appears on media

In order to preserve the print heads:

- ***Do not try non-authorized media***
- ***Do not manually move the carriage by hand***
- ***Always use the print head maintenance procedures***

Targeted Consumer

This printer seeks to fulfill a market need in the production of digital graphics for runs between 1 and 150 pieces, at lower costs than both short-run screen printing or transfer to vinyl digital printing methods. The Arizona DSP is intended for production-oriented printing environments; ventilation and 200-240v, 30amp power are required. Due to these requirements the printer IS NOT intended to be used in an "office" environment.

3M™ Media + 3M Ink = 3M MCS Warranty

The Arizona DSP leverages the cooperative effort between Raster Graphics and 3M to manufacture and market the first ever inkjet printing system to create direct-print vinyl graphics backed by the 3M Matched Component System® (MCS) Warranty. Finished graphics produced with the Arizona DSP are backed by the 3M MCS Warranty for three (3) years outdoors (2 yrs. desert) without an overlaminate when mechanical, chemical and abrasion resistance are not a requirement. The 3M MCS Warranty is the most comprehensive graphics warranty in the industry today. 3M Certified Piezo Ink Jet fabricators will be able to offer the warranty, and will appreciate the added peace-of-mind knowing their finished graphics are made to last.

The Arizona DSP uses 3M™ Scotchcal™ Piezo Ink Jet Inks Series 3700, for printing onto select 3M vinyl films and paper media from RGI. Customers will undoubtedly inquire about other vendors' media offerings and their usability in the Arizona DSP. Neither Raster Graphics nor 3M will support the use of other vendors' media.

Technical & Environmental Specifications

The Arizona DSP performs in a wide range of environmental conditions. For best results, you should locate the printer in an area where the humidity is consistently between 40% and 60%. Since humidity has a direct effect on print quality, this is one of the most important considerations in choosing a location.

The temperature of the printer's location is also important. You will obtain the best quality of prints when room temperature is between 65°F and 85°F. The Arizona DSP's technical specifications, as indicated in ***Table 1-1***, describe the capabilities of the printer and help you design the right location and environment for the best operation. A thorough understanding of the printer's specifications will help you get the best performance and highest quality from your Arizona DSP.

Output quality may vary depending on type of print data/file, application or print speed. The user has control of print speed to optimize production and customer output requirements. Specifications are based on the actual test data using Raster Graphics qualified supplies under optimum operating conditions.

Writing Technology:	Piezoelectric Inkjet with 384 nozzles (3 print heads times 128 nozzles) per color Printhead Reliability - 2 billion fires per nozzle MTBF
Resolution:	309 dpi (with a 50 picoliter drop volume per nozzle)
Print Mode/Speed:	90-180 square feet an hour w/ upgrade (may vary depending on media)
Media:	Variety of 3M™ Vinyls and paper-based media for signage, fleet graphics & backlit
Media Handling:	Roll feed reel to reel direct imaging process
Media Width:	24 to 54 inches (60.96 cm to 137.16 cm)
Image Width:	52.282 inches (132.8 cm) Maximum; no Minimum
Print/Image Length:	Single Image - Up to limit of 9 Gbyte HD. Multiple Copies - Full roll of media
Media Transport Speed:	Forward or Reverse: 3 in/sec
Inks:	3M™ Scotchcal™ Piezo Ink Jet Inks Series 3700 in Black, Cyan, Light Cyan, Magenta, Light Magenta and Yellow solvent-based pigmented inks in 32 ounce reservoirs
Quantity of Ink:	One 32 oz. bottle of ink for each color
Printer Processor:	Intel 80960CF RISC processor
Printer Memory:	32 MB RAM and 9GB Disk Drive
Printer Input Data Format:	Raster Graphics bit level image data
Hardware Interface:	Standard Centronics Parallel, SCSI-2, Ethernet TCP/IP and RS-232 Serial Ports
Software:	PosterShop color production software with PiezoRx for compensating for misfiring nozzles
Power Requirements:	208-240V, 30 amp, single-phase, 60 Hz, dedicated circuit (North America) 200-240V, 30 amp, single-phase, 50/60 Hz, dedicated circuit (International)
Environment:	Operating Range *Temperature* 65º to 85º F (18.3º C to 29.4º C) *Humidity* (40% to 60% RH non-condensing) *Altitude* [Up to 8,000 feet (2,438 meters)] Optimum Storage Temp. 60º to 90º F (15.6º C to 32.2º C) 10% to 80% RH non-condensing Up to 8,000 feet (2,438 meters)
Dimensions:	Access Doors Closed 81 inches L x 26 inches D x 57 inches H (206 cm W x 66 cm D x 145 cm H) w/ air manifold Access Doors Open Minimum clearance area of 17 feet long by 11 feet deep (5.2 meters L x 3.4 meters) Optimum clearance area of 20 feet L x 13 feet D (6.1 meters L x 4 meters D) Shipping Crate 92 inches L x 36 inches D x 68 inches H (233.68 cm W x 91.44 cm D x 172.72 cm H)
Weight:	Arizona DSP & Shipping Crate 1100 pounds (498 kilograms) Arizona DSP 800 pounds (362 kilograms) Shipping Crate 300 pounds (136 kilograms)

Table 1-1 Technical Specifications

Printer Features

The Arizona DSP delivers screen print quality images. The complete system includes the printer, Postershop Pro color production software and a Start-up Kit. The Drive Roller, Vacuum Platen and Dancers work in unison to tension the media to ensure accurate alignment and color registration.

Left Equipment Bay

The left side access door or equipment bay has several main areas you will be required to monitor and maintain during normal printing operation. The maintenance cloth station, as shown in ***Figure 1-4***, Left Side Equipment Bay, was designed to receive ink purges and must be changed once a new roll has been used completely. The ink supply bottles are also stored on a metal shelf designed to hold them and ink if spilled.

Right Equipment Bay

The capping station, as shown in ***Figure 1-5***, Right Side Equipment Bay, is a very delicate area because the print heads are purged and stored there when the printer is not in use. Periodically, the carriage assembly will need to be accessed through the control panel in order for the capping station to be revealed for cleaning and the absorbent pad to be replaced. The ink waste bottle is also located on this side and receives all the purged ink from the capping station. It will need to be replaced with a new bottle once it's full.

A Watlow temperature control device is used to monitor the heater operation and shouldn't be tampered with. Settings are not user adjustable and this control unit is controlled by the printer firmware.

Writing Technology

The Arizona DSP is a piezoelectric inkjet printer that uses six standard inks for fast drying outdoor durability. Inks are packaged in 32 ounce C, M, Y, K, Light Cyan and Light Magenta containers to deliver screen print quality to a wide variety of 3M vinyl films and paper media from RGI.

The printer uses a sophisticated ink delivery method and requires a certain color order which should be noted. The print head color order on your printer from the top of the carriage assembly down is: Yellow, Light Magenta, Magenta, Light Cyan, Cyan and Black as shown in ***Figure 1-1***, Carriage Color Order. Pay close attention to the Ink Bottle order on the Ink Tray located in the left side Access Door, you don't want to mix these inks together in the ink tubes.

Air Circulation & Manifold Ducting

The printer uses a manifold, which is attached to the top frame to guide the circulating air outside. Depending on your printer environment, a customer-supplied 4" (10.1 cm) diameter duct must be installed on site to guide the fumes, blown by the fans, away from the printer during printing.

Refer to the Installation Site Survey for proper requirements for printer and exhaust system setup. The manifold has an adjustable air flow level near the exhaust exit cylinder. Air flow will need to be measured and set to 1500 +/- 50 feet per minute (457.2 meters per minute). Make sure all blowers are operating properly before taking this measurement. Take this measurement by inserting the approved anemometer into the small exhaust exit cylinder (sheet metal duct tube) as far as it will go, see procedure at back of guide.

Purolator Hi-40 Filters

Two large filters are required on the Arizona DSP while printing. The filters are located at the lower front of the machine. Filter type, part number and dimensions are documented on labels near the filter location and replacements are available for purchase from RGI. They should be exchanged for new ones when the filter fabric begins to discolor from original condition. Contact a RGI Customer Service representative if you have any questions or for more information on these filter types and service life.

Air Pressure Pump Filter

An Air Pressure Pump filter is required on the Arizona DSP when the pump supplies air to the ink reservoirs during print head primes. The filter is located just below the Valve Tree and Ink Bottle Tray in the Left Equipment Bay. The filter is transparent and will need to be replaced when the clear crystal material begins to fully discolor. Contact a RGI Customer Service representative for filter type, service life, replacements, questions and/or for more information.

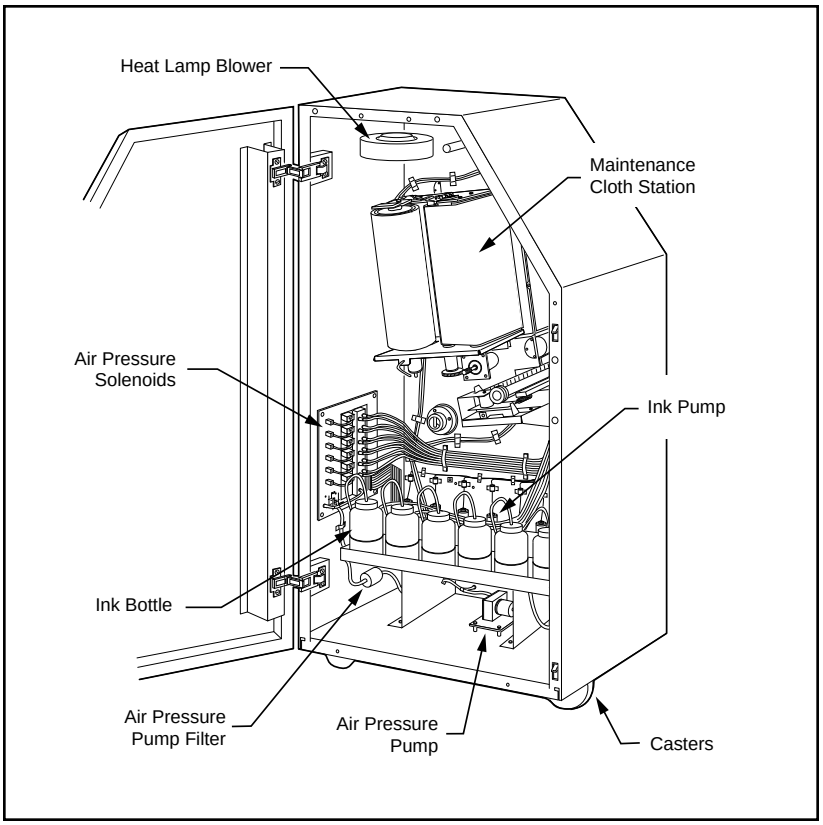


Figure 1-4 Left Side Equipment Bay

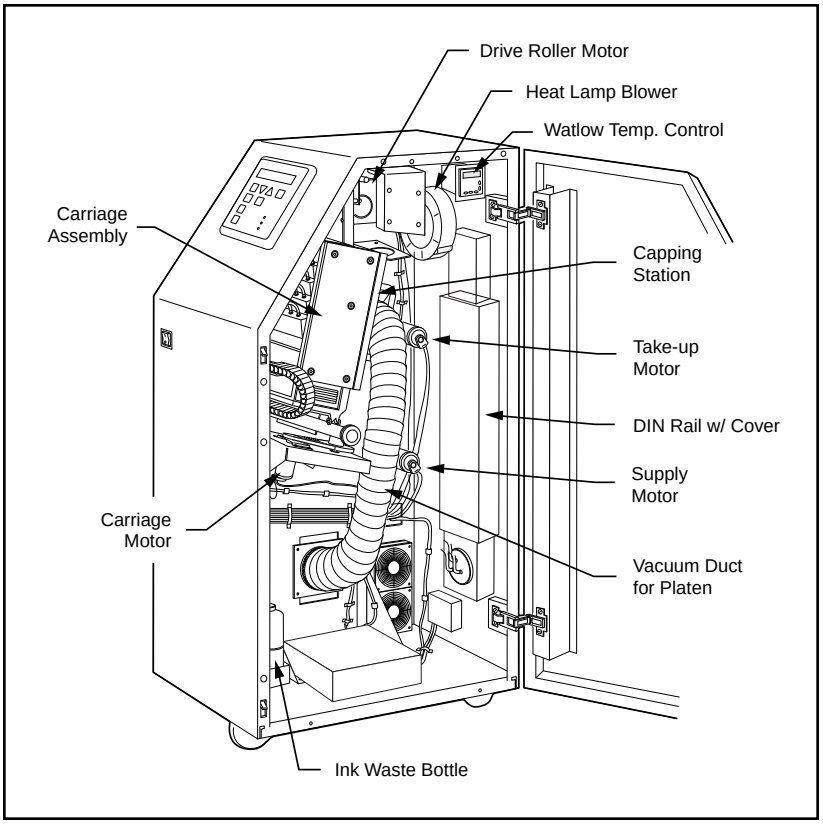


Figure 1-5 Right Side Equipment Bay

Drive Roller and Media Path

The Drive Roller advances the media, while the dancers provide tension for high accuracy and efficient transport through the critical inking and drying stages. ***Figure 1-6*** shows the Drive Roller and Media Path.

Control Panel and Menu Tree

The 40-character liquid crystal display (LCD) message display provides a task-oriented series of nested menus and options. You can easily set up default parameters or adjust them, as needed, for particular printing jobs. ***Figure 1-7*** shows the Control Panel & Power Switch.

Server and Network Printing

The Arizona DSP communicates over a Centronics™ Parallel, SCSI-2 or an Ethernet TCP/IP interface. Use a SCSI Terminator provided with the printer when not daisy chaining to other peripherals.

Hard Disk

The on-board hard disk retains the current printing job. Jobs are spooled and printed on a first-in, first-out basis; the printer can also spool incoming jobs as it prints.

Print Density and Accuracy

Prints at 309 x 309 dots per inch resolution. The print accuracy over 20 feet is +/- 0.2%.

Software

The Arizona DSP prints in partnership with software running on the host system or network. These servers preprocess the print jobs for the printer. The Arizona DSP includes one copy of Onyx PosterShop software. Refer to the Onyx PosterShop User's Guide for more information.

Hardware Interfaces

You have a choice of using the Centronics Parallel, SCSI-2 or Ethernet interface. The Arizona DSP will spool print jobs from the network over SCSI or Ethernet connections without impairing network performance or printing operation.

Space Requirements

The Arizona DSP is resupplied with media and ink, so any location must allow convenient and safe access to the areas of the printer where these are installed. Refer to the Installation Site Survey for proper requirements for printer setup. The Survey includes a diagram for space requirements along with other technical specifications for proper environmental conditions.

You'll need approximately 187 sq. ft. to 260 sq. ft. of operating room when accessing all doors for inspection or service. Below is the recommended space allowance for accessing the printer during job runs:

Allow 3 - 5 feet (91.44 centimeters - 152.4 centimeters) at the rear of the printer to open the back door, remove the empty media roll, and install a fresh one. Reserve space to set aside the empty media roll.

Allow 5 feet (152.4 centimeters) to obtain access to the components behind the right and left side access doors.

Allow 5 feet 10 inches (177.8 centimeters) minimum ceiling height to raise the front and rear doors above the printer.

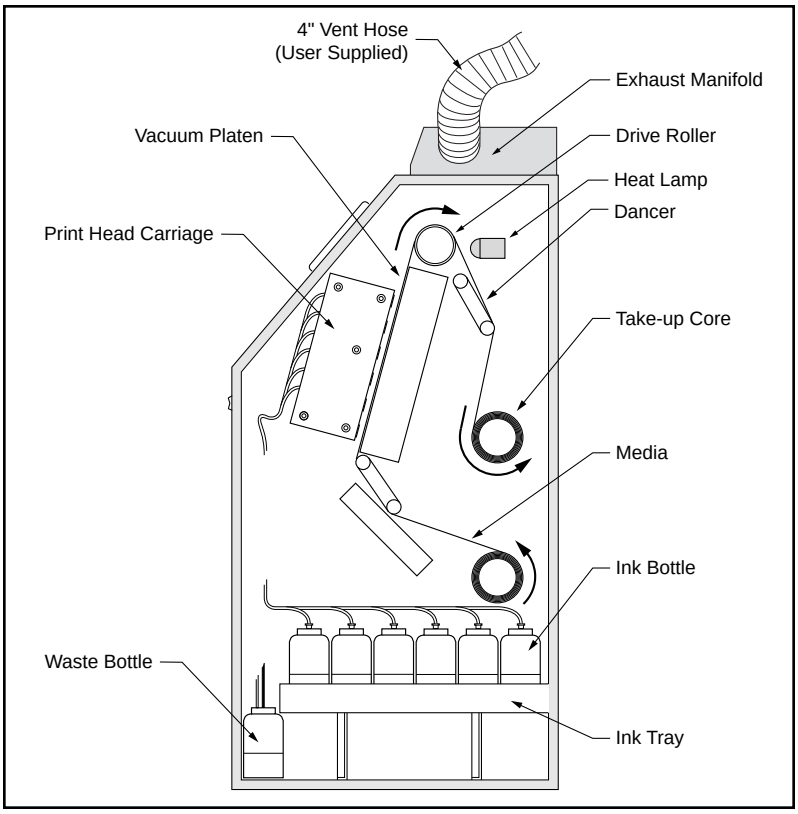


Figure 1-6 Drive Roller and Media Path

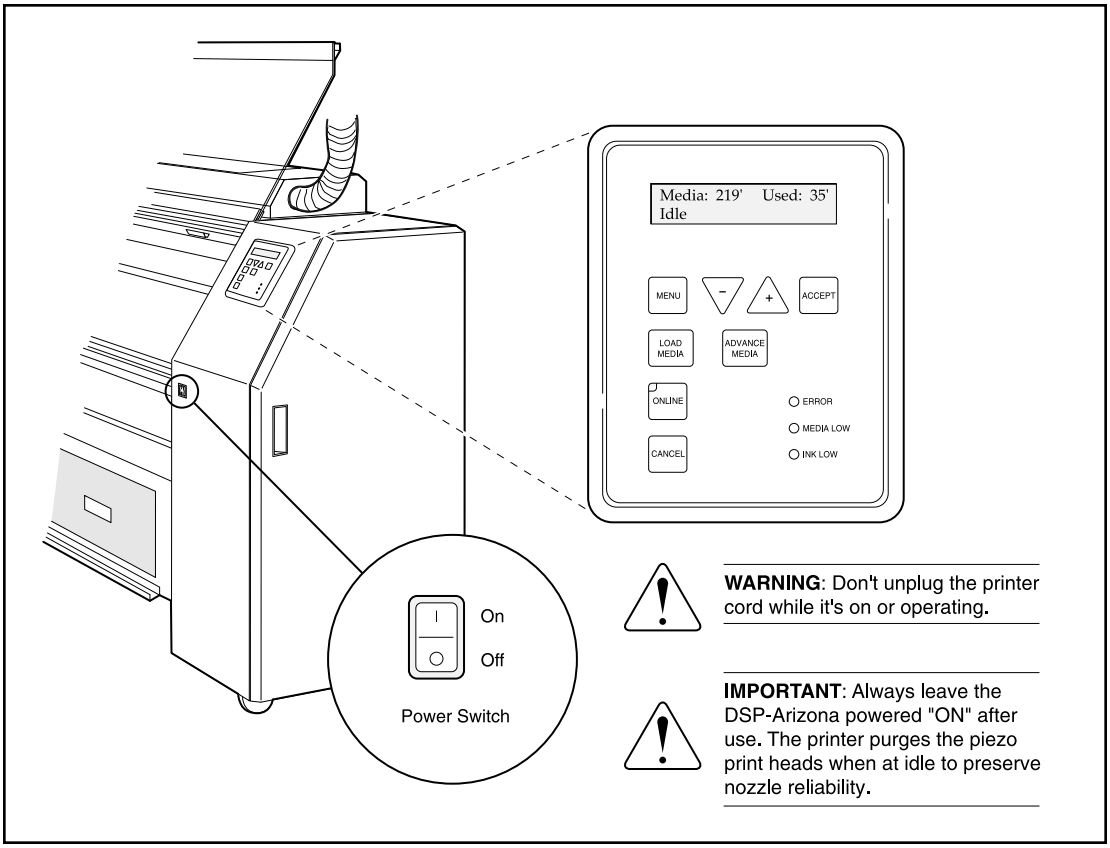


Figure 1-7 Control Panel & Power Switch

Chapter 2: Printer Setup

Connecting to a Power Source

The Arizona DSP requires 200-240 VAC power (30 amps operating U.S. and International).

Turning Power On

1. Make sure the power cable is connected to the printer power plug and to the wall socket and refer to ***Figure 2-1***, Power Connection Area.

2. Turn the power switch to the ON position with the "I" mark pushed in and refer to ***Figure 2-2***, Power Switch Location.

Turning Power Off

1. Turn the power switch to the OFF position with the "O" mark pushed in.

To ensure that power is not turned on accidentally, remove the power cable from its connection to the printer. Note that once powering on this printer, leave it running continuously even when at idle because the printer automatically runs maintenance routines to keep it at its optimum operating specifications.

Software Setup

See the PosterShop or 3M Software and User's Manual for updated and/or additional setup steps for a particular operating system with use with the Arizona Digital Screen Press before printing.

Use these steps below for setting up and printing on the Arizona DSP with PosterShop running on an NT OS:

1. **Connect the printer and computer**.

a) The SCSI connection is at the lower right of the printer.

b) Install a SCSI terminator next to the SCSI cable, if not daisy chained.

2. **Check the SCSI selections**.

a) Boot Windows (NT or 95). Go to the lower left of your computer screen, click on START.

b) Select SETTINGS.

c) Choose CONTROL PANEL.

d) Double-click on the SCSI ADAPTERS icon. Click on the SCSI item you have on your computer.

e) Double click on RGI Arizona DSP, then choose the SETTINGS tab. The Target ID is the printers SCSI address. If you want it to have a different address, go to the printer itself and change it through the control panel there.

f) Now verify that SETTINGS data matches the data the software (PosterShop) has.

These are the steps for setting up and running PosterShop with the Arizona DSP (also see PosterShop User's Guide for more information):

1. **Install PosterShop's key (a hardware dongle) into the computer's parallel port**.

Doing this enables you to use PosterShop and tells PosterShop what printer(s) you're using.

2. **Verify that PosterShop's settings match the Window's settings**.

a) Boot PosterShop. Go to its menu bar, click on SYSTEM. Select PRINTERS.

b) Choose the Arizona DSP in the Current Printers box.

c) Then click on EDIT INFO.

d) Select the PRINTER PORT tab.

e) Be sure SCSI is the printer port selected.

f) Press the CONFIGURATION PORT box.

g) Be sure the SCSI ID matches the Target ID number, that the SCSI LUN matches the Logical Unit Number, and the SCSI ADAPTER matches SCSI PORT. Make changes where necessary, then hit OK.

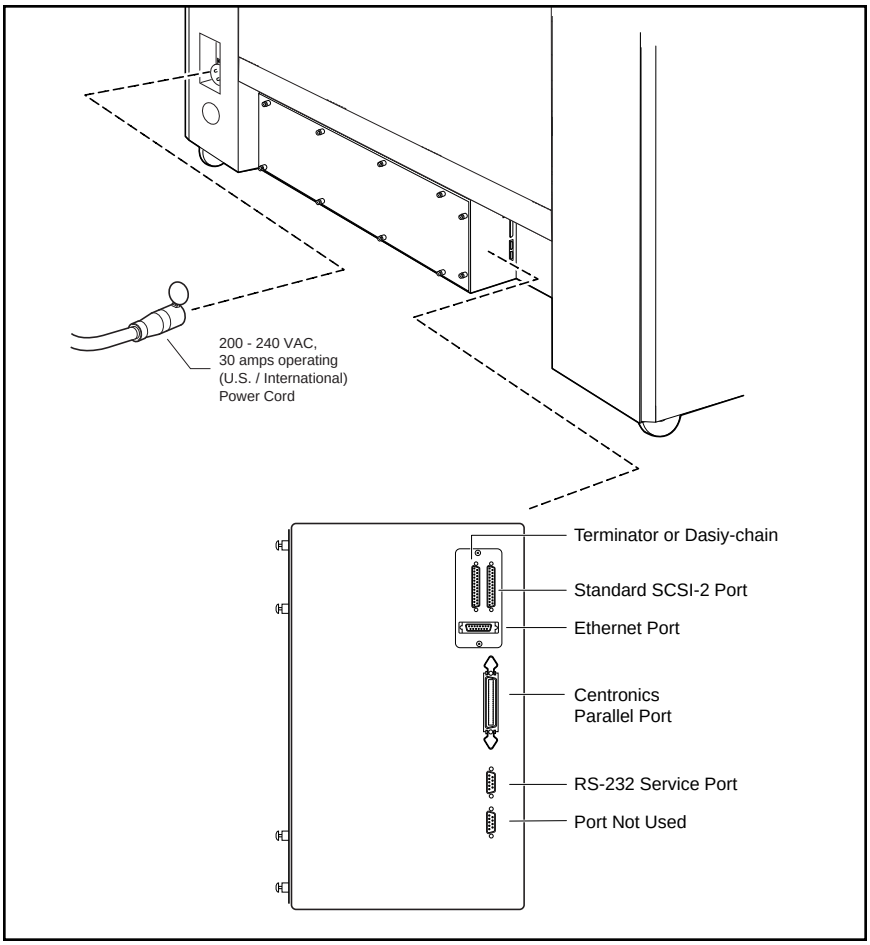


Figure 2-1 Power Connection Area

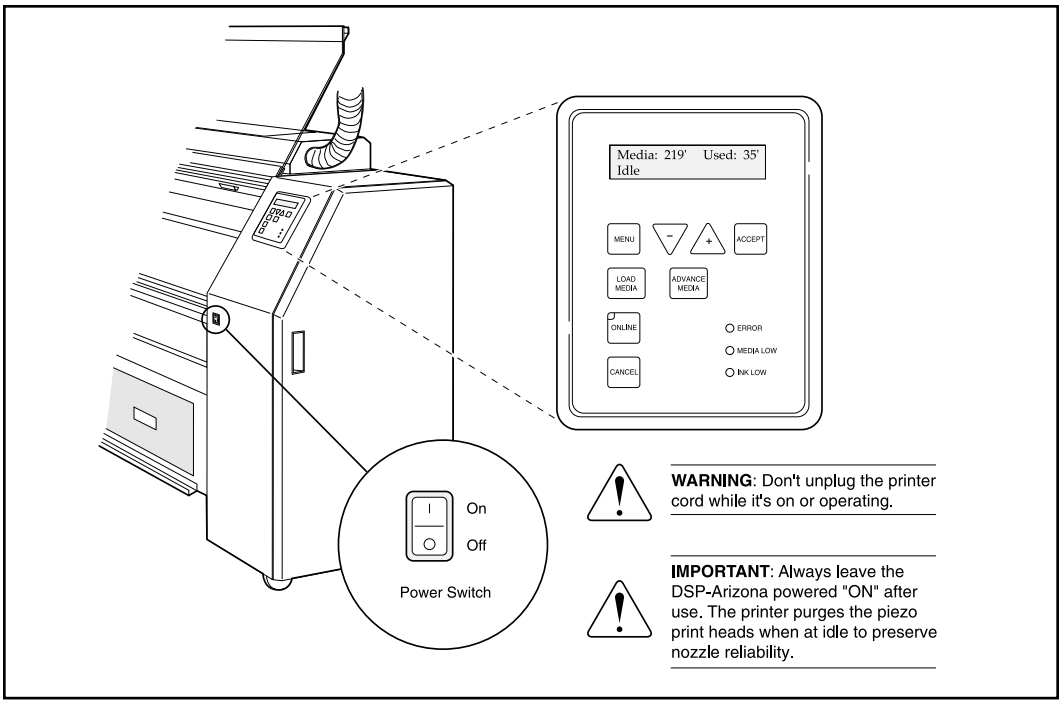


Figure 2-2 Power Switch Location

Configuring the Parallel, SCSI or Ethernet I/O Ports

This section covers three types of input to the Arizona DSP: Centronics Parallel, SCSI and the Ethernet network. The Centronics Parallel, SCSI and Ethernet interfaces are built into the printer.

Configuring the Parallel Port

The Arizona DSP uses a standard Centronics Parallel data cable, like those used by desktop printers. The limit of the Parallel cable is 12 feet (4 meters). Longer cables may cause printer errors. Refer to ***Figure 2-3***, Parallel Port Menu.

1. Press the MENU button at
   Media: xxx' Used: yyy'

to go to
   MAIN MENU
   copies/reprints

2. Press MENU two times to display
   MAIN MENU
   configure I/O

3. Press ACCEPT to go to
   CONFIGURE I/O
   active: parallel

This option selects the parallel port when you press ACCEPT.

4. You will see
   PARALLEL PORT
   fast (or slow)

You can set parallel port operation to SLOW or FAST, which are timing parameters for the Centronics port. Try FAST first. If the printer behaves erratically, or doesn't print at all, switch to SLOW.

5. Press ACCEPT, or press the MENU button, and you will see
   PARALLEL PORT
   timeout XXX seconds

This option lets you specify a time period to wait before initiating printing (1 - 600 seconds). This may be necessary if the software sending the print job doesn't use a print command.

If the printer seems to hang during a transfer, adjust this value. If your software uses a proper print command, the timeout value is ignored.

6. Press ACCEPT or MENU to return to
   CONFIGURE I/O
   active: parallel

Configuring the SCSI Port

The standard SCSI port connects the Arizona DSP to selected platforms. Contact Raster Graphics Customer Support for information on platform compatibility.

The Arizona DSP uses a standard SCSI-2 data cable. The limit of communication over this cable is 10 feet (3 meters) for a single-ended SCSI-2 interface, or 80 feet (25 meters) for a differential SCSI-2 interface.

Refer to the SCSI Port menu shown in ***Figure 2-4***.

1. Press MENU to select
   MAIN MENU
   CONFIGURE I/O

2. Press MENU to select
   CONFIGURE I/O
   active: parallel

3. Press + to go to
   CONFIGURE I/O
   active: SCSI

4. Press ACCEPT to select the SCSI port option.

5. Press ACCEPT again to go to
   SCSI PORT
   SCSI address: X

This option specifies a two-digit SCSI address, which identifies the printer to the host system.

6. Press ACCEPT to accept the current address, or use the +/– buttons to enter the correct address (1 - 7), and then press ACCEPT.

You can also move on to the timeout option by pressing the MENU button.

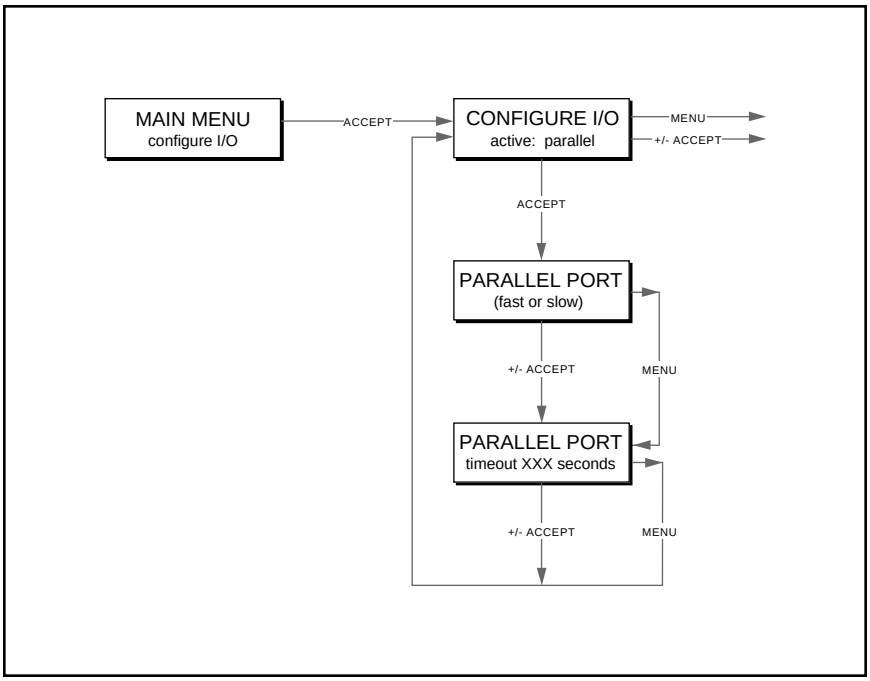


Figure 2-3 Parallel Port Menu

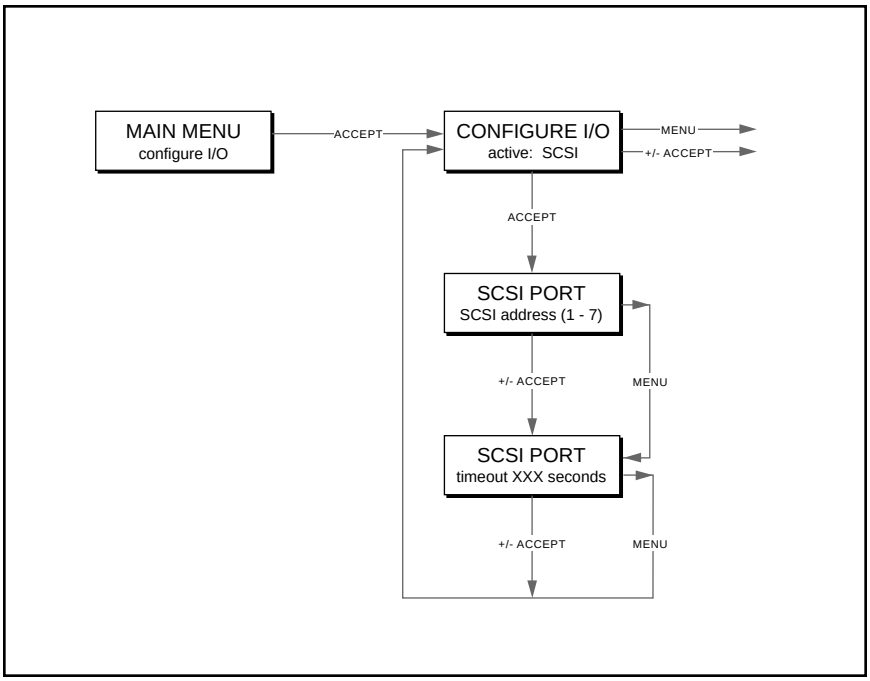


Figure 2-4 SCSI Port Menu

When you specify the SCSI address, you will see
SCSI Port
timeout XXX seconds

This option lets you specify a time period to wait before initiating printing (1 - 600). This may be necessary if the software sending the print job doesn't use a print command. If the printer seems to hang during a transfer, adjust this value. If your software uses a proper print command the timeout value is ignored.

7. Use +/- to adjust to the desired timeout period, Press ACCEPT to enter value.

You can also get back to the main SCSI menu by pressing the MENU button.

You will return to
CONFIGURE I/O
active: SCSl

8. Press ACCEPT to return to the Main Menu.

Configuring the Ethernet Port

The Ethernet interface allows network users access to the Arizona DSP printer over Ethernet networks. You give the printer a unique internet address, then control access to it through the host system's Ethernet connection. The printer provides an lpd connection for print spooling.

Each submitted print job can contain the following information:

- requester name
- date
- requesting workstation name
- time
- job name

Refer to the Ethernet Operation Guide for detailed instructions in installing/removing the Ethernet port. Follow these steps to set the Ethernet port options, referring to the menu tree shown in ***Figure 2-5***.

1. Press MENU to select
MAIN MENU
configure I/O

2. Press ACCEPT to select
CONFIGURE I/O
active: parallel

and press the +/– buttons until you see
CONFIGURE I/O
active: ethernet

3. Press ACCEPT to go to
ETHERNET PORT
internet address

4. Check with your system administrator to obtain the correct internet address.

Press ACCEPT to display the current internet address and use the +/– buttons to set each xxx value in the range of 0 to 256:
INTERNET ADDRESS
XXX.XXX.XXX.XXX

5. When you reach the correct value, press ACCEPT to move to the next value to specify. Repeat until you have entered the entire internet address, a 12-digit number.

6. Press ACCEPT to set the address, or press MENU to return to
ETHERNET PORT
internet address

7. Press ACCEPT to go to
ETHERNET PORT
host name

8. Press ACCEPT to display the current host name and use the +/– buttons to set each character in the range of 0 to 9 or a through z. When you reach the desired character, press ACCEPT to enter and move to the next character to specify. Repeat until you have entered the entire host name.

9. Press MENU to return to
CONFIGURE I/O
active: ethernet

10. Press ACCEPT to go on to
HOST NAME
ARIZONA

Enter the host name given to you by the system administrator.

11. Press MENU to return to
ETHERNET PORT
host name

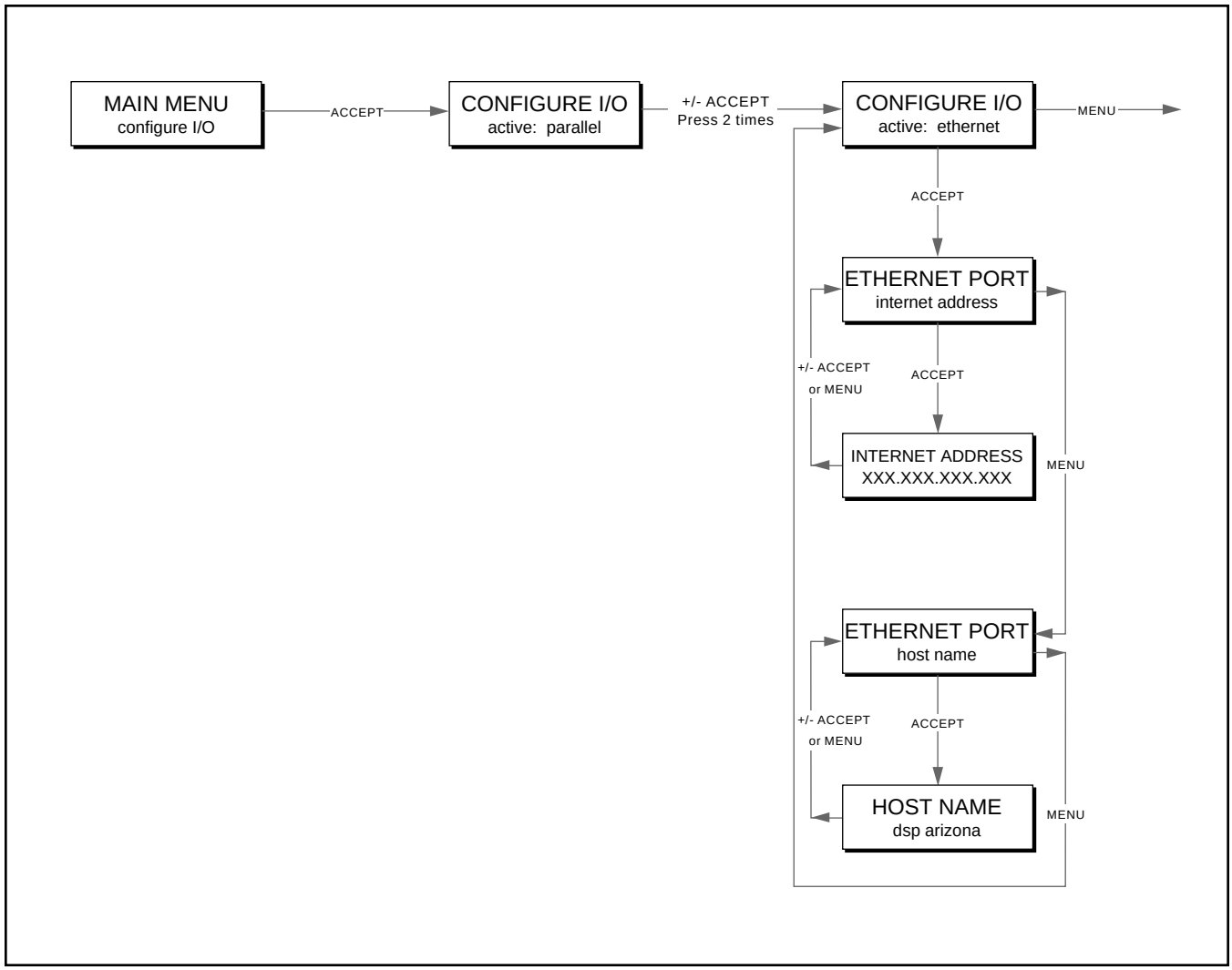


Figure 2-5 Ethernet Port Menu

Installing/Replacing Maintenance Cloth Station

The Maintenance Station is located in the left side access door of the Arizona DSP. This station provides an area for the print heads to purge particles blocking the nozzles. The station requires a Blotting Cloth and an empty Take-up Core for maintaining print head purges. Between every new installation, wipe off the ink from the support plate with isopropyl alcohol and check absorbing pads for excess ink. Replace if needed.

Installing Blotting Cloth

Note: Don't handle blotting cloth with bare hands as oils and debris from hands can permanently clog print head nozzles. Never cut the blotting cloth roll and reattach to a new core as this will cause improper advance.

1. Put protective gloves on. Pull the release handle, and slide Maintenance Cloth Station back as shown in ***Figure 2-6***, Pulling the Release Handle.

2. Raise lever arms. Install cloth roll over rear-most hub and lower upper arm to capture top as shown in ***Figure 2-7***, Installing the Cloth Roll.

3. Feed leading edge of cloth through slot just behind the support plate. Pull cloth leading edge across cloth support plate as shown in ***Figure 2-8***, Feeding the Cloth. Install notched Take-up Core on drive pins and lower upper arm.

4. Remove liner off leading edge of cloth and tape evenly to empty Take-up Core as shown in ***Figure 2-9***, Rotating the Cloth.

5. Rotate supply roll to take out slack and slide station forward until latched as shown in ***Figure 2-9***, Rotating the Cloth.

Replacing Blotting Cloth

1. Follow the control panel LCD message.

2. Put protective gloves on. Pull the release handle, and slide Maintenance Station back as shown in ***Figure 2-6***, Pulling the Release Handle.

3. Locate the lever arms and lift them up. Remove the Take-up Core with used cloth and discard. Remove the empty Blotting Cloth supply core and place it over the forward most hub nearest to the support plate. Make sure to wipe down the support plate with alcohol and a lint-free cloth before installing a new blotting cloth roll.

4. Install a new Blotting Cloth roll over rear-most hub and lower upper arm to capture top as shown in ***Figure 2-7***, Installing the Cloth Roll.

5. Feed the leading edge of cloth through slot just behind the support plate. Pull cloth leading edge across cloth support plate as shown in ***Figure 2-8***, Feeding the Cloth.

6. Remove liner off leading edge of cloth and tape evenly to empty Take-up Core as shown in ***Figure 2-8***, Feeding the Cloth.

7. Rotate supply roll to take out slack. Slide station forward until latched as shown in ***Figure 2-9***, Rotating the Cloth. Press ACCEPT on the control panel.

Replacing the Absorbing Pad

1. Access the Maintenance Cloth Station by opening the left side access door while the printer is idle.

2. Check the Absorbing Pad on the catch tray below the Maintenance Cloth Station for ink saturation. If the Absorbing Pad is significantly soaked with ink, then it is time to replace it with a new one.

3. Put protective gloves on and remove pad. Clean excess ink from tray. Replace pad with the extra pad provided in the Starter Kit as shown in ***Figure 2-10***, Replacing the Cloth Station Absorbing Pad.

4. Wipe down any ink that may have touched other printer components and close the access door.

Cleaning the Maintenance Backplate Cover Sheet

The Blotting Cloth that is used in the Maintenance Cloth Station absorbs ink from the print heads during a purge. The cloth is supported by the Maintenance Backplate and smooth sheet cover. Wipe the sheet cover clean with isopropyl alcohol and a lint-free cloth before installing a new Blotting Cloth or follow steps below:

1. Access the Maintenance Cloth Station by opening the left side access door while the printer is idle.

2. Retract the Maintenance Cloth Station and remove the Blotting Cloth as specified by the control panel.

3. Put protective gloves on and wipe any ink that may have accumulated along the surface of the sheet cover with a lint free cloth saturated with isopropyl alcohol.

4. Install the new Blotting Cloth and follow instructions on access door.

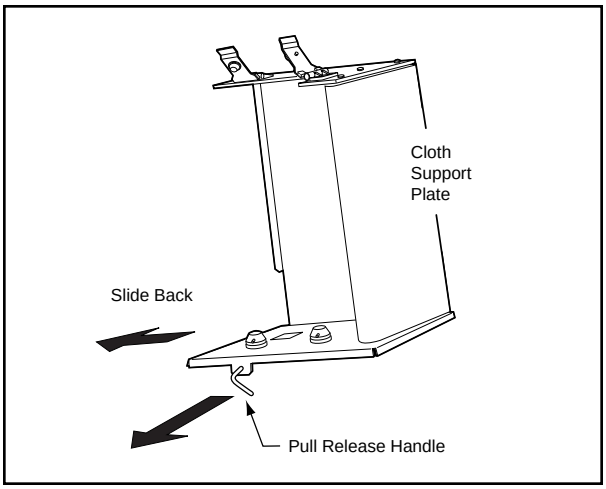


Figure 2-6 Pulling the Release Handle

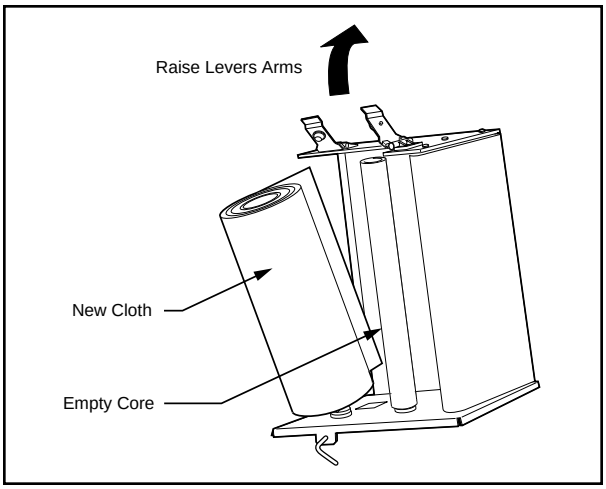


Figure 2-7 Installing the Cloth Roll

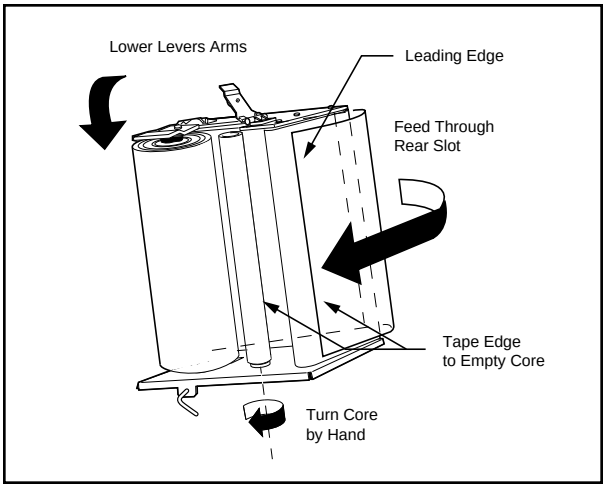


Figure 2-8 Feeding the Cloth

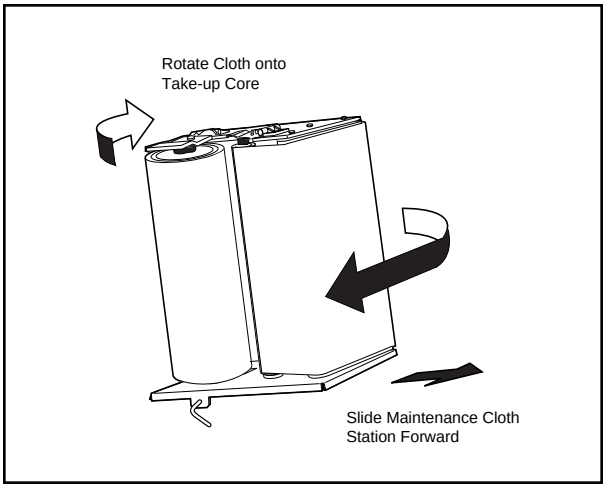


Figure 2-9 Rotating the Cloth

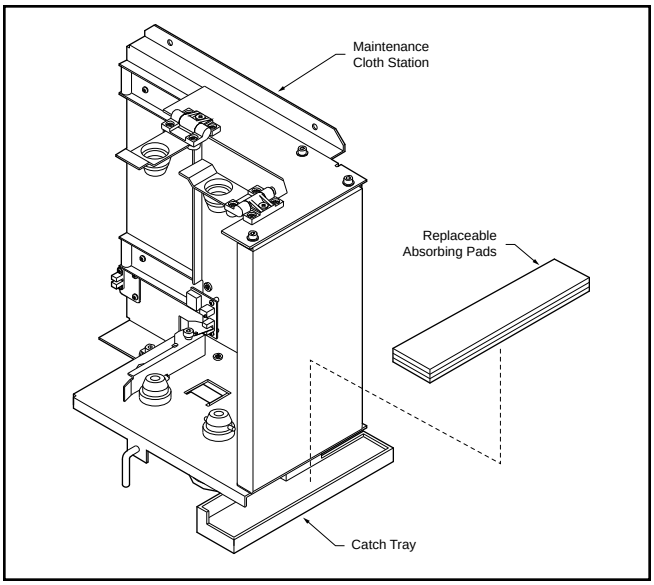


Figure 2-10 Replacing the Cloth Station Absorbing Pad

Installing/Replacing Inks

Each Arizona DSP is a six color printer that comes with a supplies Startup Kit. This kit contains several items including one roll of Media (for calibration purposes only), one bottle each of Black(K), Cyan(C), Magenta(M), Yellow(Y) Ink, Light Cyan(LC) and Light Magenta. Also included are lint-free cloths, Gloves, an Ink Waste Bottle, an extra Drying Lamp, Take-up Cores and Blotting Cloth. The Ink, Media, Take-up Core, and Blotting Cloth must be installed before operating the printer.

Ink Installation Steps

Follow these steps to specify the ink type:

1. Place one or more (up to six) standard color ink bottles on the metal shelf nearest to the door, as indicated in ***Figure 2-11***, Installing/Replacing Ink Bottles.

2. Remove the ink bottle cap and protective cover. Locate the quick coupler for each bottle.

3. Match or align the quick coupler and ink bottle cap extending from the ink pump motor directly behind the ink bottle you want to install.

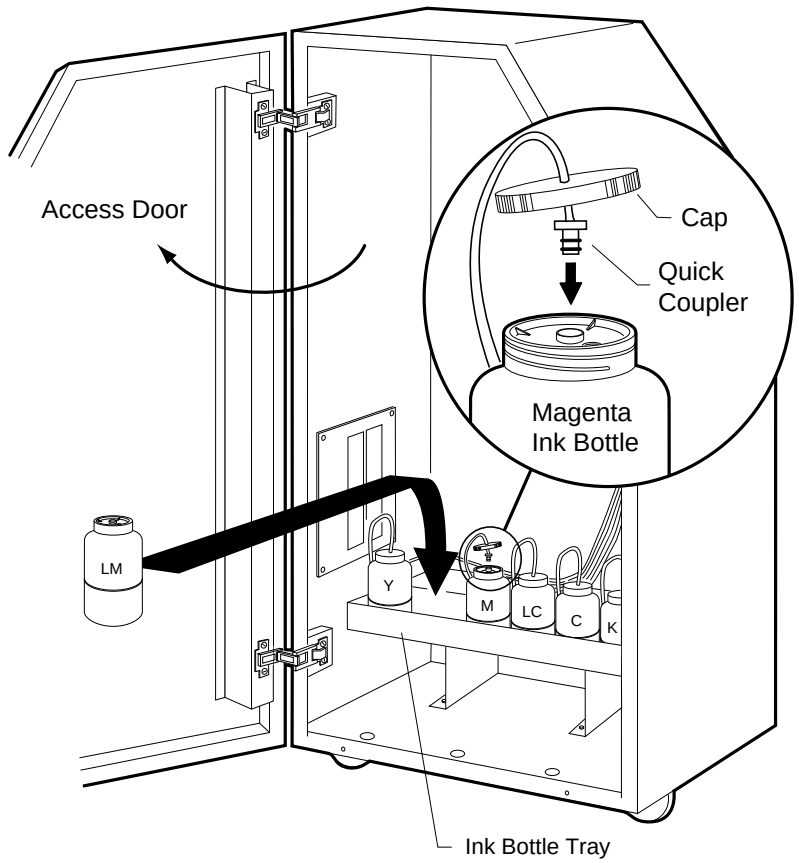
4. Snap the quick coupler into the appropriate bottle top and screw cap on.

Note: Install one ink bottle at a time to reduce vapor exposure. See error list in Appendix A for error messages associated with installing/replacing ink bottles.

Empty Ink Bottle Usage

Do not, under any circumstances, pour the remaining amount of ink of any ink bottle into another ink bottle of the same color for use in the printer. This applies especially to empty or partially empty ink bottles, as designated by the control panel, where the remaining amount of ink is thicker than a new bottle of ink.

Mixing ink increases the chance of poor image quality, clogged ink bottle filters and clogged Print Heads and will rendering the printer useless until a new bottle of ink or replacement parts are installed. Also, do not shake the Arizona DSP ink bottles before installation, nor shake them during printing. Shaking does not improve ink consistency, but may introduce unwanted air bubbles into the ink system.



Ink Tray Ink Bottle Order (from left to right):
Yellow (Y), Light Magenta (LM), Magenta (M), Light Cyan (LC), Cyan (C) & Black (K)

Note:
Carriage Assembly Ink Bottle Order (top to bottom): Y, LM, M, LC, C & K

Figure 2-11 Installing/Replacing Ink Bottles

Replacing the Ink Bottles

A sensor in each ink reservoir, near the print heads, signals the operator on the control panel when an ink bottle is low or empty by displaying a message on the control panel. Under the Operator/maintenance menu, the operator can fill an ink reservoir manually. If an ink reservoir fails to fill, then that color ink bottle is empty. The ink reservoirs will never empty out, which reduces the chance of ambient air entering the ink tubes and getting into the print heads. When an ink bottle becomes empty, the control panel will also signal the operator to replace that color. Follow the steps below to correctly replace an ink bottle.

1. Determine the type of Ink Bottle to be replaced as designated by the control panel.

2. Put protective gloves on.

3. To replace an Ink Bottle, open left equipment bay door containing the Ink Bottles as indicated in ***Figure 2-11***, Installing/Replacing the Ink Bottles.

4. Remove the bottle cap and the Quick Coupler from the Ink Bottle.

5. Remove and discard the used Ink Bottle.

6. Place the new Ink Bottle on the ink bottle tray.

7. Reattach the Quick Coupler and bottle cap.

8. Use the +/- buttons on the control panel to enter the type of Ink Bottle that was replaced and press ACCEPT to begin printing as shown in ***Figure 2-12***, Control Panel LCD.

IMPORTANT! Do not, under any circumstances, pour the remaining amount of ink of any ink bottle into another ink bottle of the same color for use in the printer. This applies especially to empty or partially empty ink bottles, as designated by the control panel, where the remaining amount of ink is thicker than a new bottle of ink.

Mixing ink increases the chance of poor image quality, clogged ink bottle filters and clogged Print Heads and will rendering the printer useless until a new bottle of ink or replacement parts are installed. Also, do not shake the Arizona DSP ink bottles before installation, nor shake them during printing. Shaking does not improve ink consistency, but may introduce unwanted air bubbles into the ink system.

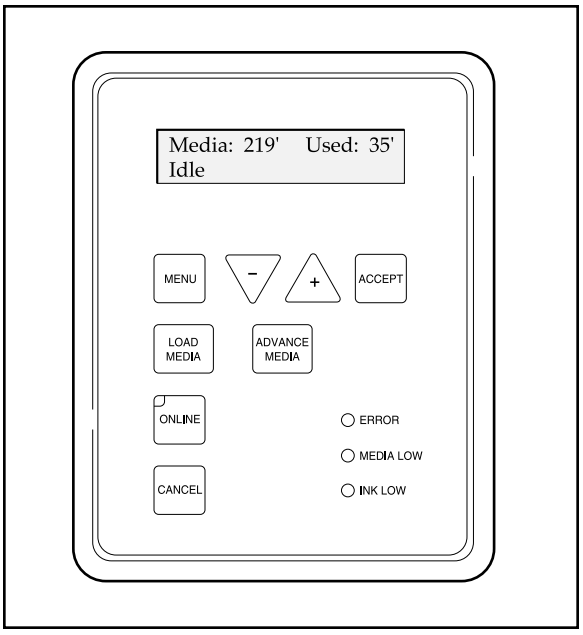


Figure 2-12 Control Panel LCD

Installing/Replacing Media

Ensure the highest quality printing by protecting the media coating and store it at the proper temperature and humidity. Media should be conditioned to the printer environment. Place media in the same room as the printer for 2-24 hours. For media Linearization and Ink Limiting, see the PosterShop User's Manual.

After media installation, make sure the Pinch Rollers are located on the ends of the media and engaged to the Drive Roller. When the printer is in an idle condition for extended periods, i.e. overnight or weekends, remember to disengage the Pinch Rollers and leave the printer on. Leaving them engaged may leave indentations in the Drive Roller. The Drive Roller should be wiped clean thoroughly after every media change with a lint-free cloth and isopropyl alcohol to prevent media slippage.

Installing Media

1. Press the LOAD MEDIA button at
   Media: xxx' Used: yyy'

You will then see
   LOAD MEDIA
   media monitor

2. Follow the various menus by pressing ACCEPT or MENU to choose the appropriate settings. The menus allow the operator to choose between a New Supply Roll or Reattach Takeup.

When your selection is made, the MEDIA MONITOR menu appears allowing the operator to select Media P/N or Other, Paper, Vinyl, Media Thickness, Supply Core Dia., Takeup Core Dia., Print Temp and Dry Time as indicated in ***Figure 3-16***, Media & Ink Monitor Menus. When selecting Other, an additional menu called Blower Setup appears. The media settings are automatically set on the control panel after selecting a media type or P/N. The operator may also refer to the company Media Data Sheets for the recommended settings mentioned above.

3. Lower rear cover and position slider for paper size. Load media and empty Take-up Core on drive hubs as indicated in ***Figure 2-13***, Installing Media Roll.

4. Latch both Dancers on the left side. Push media over angled shelf until it extends out the front as shown in ***Figure 2-14***, Feeding Media Through to Front.

Note: Damage may occur to Dancers when latching them in the middle or far right side instead of on the left. Disengage Pinch Rollers too.

5. Lift the front cover. Pull leading edge of media and feed 6 to 12 inches over the Drive Roller. Pull Media Over Drive Roller as shown in ***Figure 2-15***, Pull Media Over Drive Roller. Make sure the media is between the Heat Lamp and Drive Roller before pulling it around and onto the Take-up Core.

6. Use the Jog Switch to advance media and tape it to the Take-up Core. Push Dancers to release them and engage Pinch Rollers. Make sure there is equal web tension between the drive hub and take-up hub. If the media is not properly aligned at the seam between the Take-up Core and hub, then the image, media and carriage may be damaged during the next print job as shown in ***Figure 2-16***, Attaching Media to Take-up Reel. Close all covers and press ACCEPT on the control panel to specify media type and thickness.

Note: Use the same length Take-up Core as the media supply roll size because using a 54" Take-up Core with 36" media supply causes paper alignment and tracking problems.

7. Use the magnetic Vacuum Platen covers included with the printer (see left access door) to cover the exposed area when media width is less than 40 inches. Take care not to damage the nozzles if the magnetic cover edges are curled up and not flat against Platen.

Cutting the Media

1. Press the ONLINE button to release tension on the media supply roll and Take-up Core.

2. Use the ADVANCE MEDIA button to move the trailing edge of the print over the take-up dancer arm and draw a knife across the lower take-up dancer arm to cut the print as shown in ***Figure 2-17***, Cutting the Media. Remove the Take-up Core with the desired print.

3. Unroll Take-up Core to remove print and place it back on the printer. You may also place an entirely new Take-up core on the printer. Tape the free end of the supply media to the empty Take-up Core.

4. Make sure there is equal web tension between the drive hub and take-up hub. If the media is not properly aligned, then the image, media and carriage will be damaged during the next print job.

5. Close all open doors, press the ACCEPT button to apply tension to the Take-up Core, and put the printer back online.

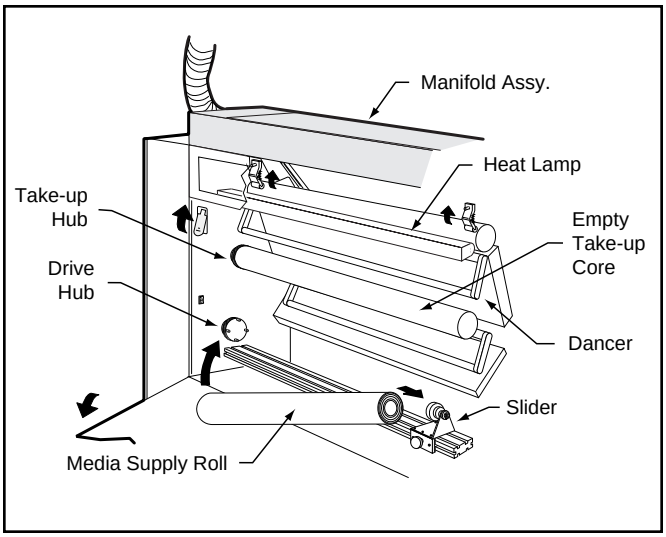


Figure 2-13 Installing Media Roll

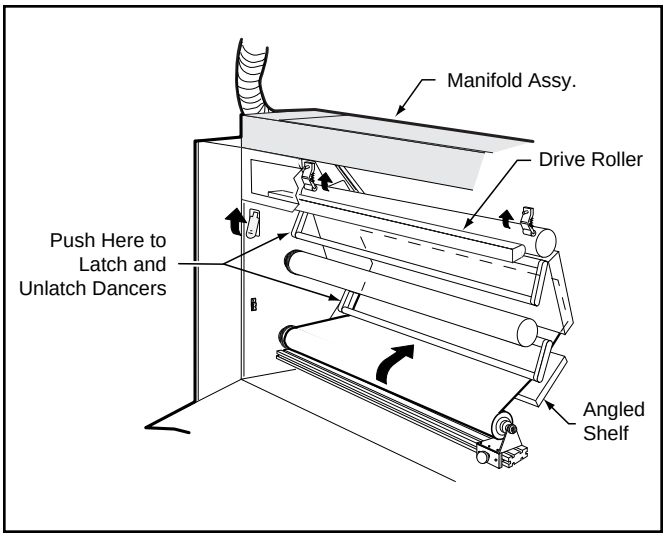


Figure 2-14 Feeding Media Through to Front

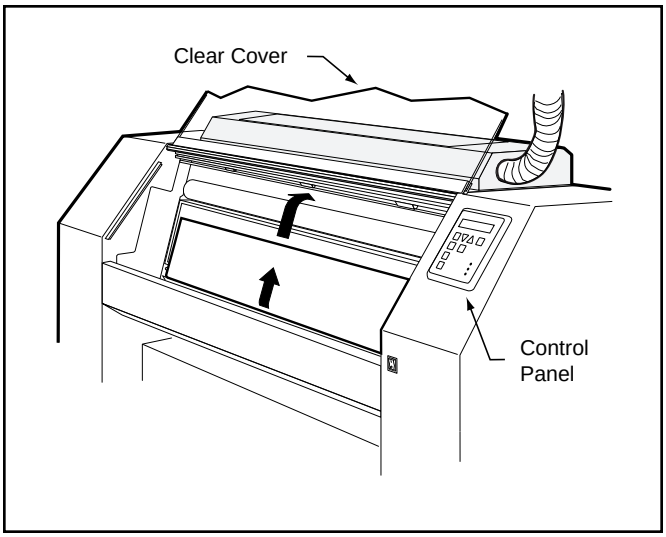


Figure 2-15 Pull Media Over Drive Roller

Replacing Media

Before replacing a roll of media, locate a new or used roll of media in the same room as the printer. Use one that has been conditioned and calibrated in PosterShop. The Drive Roller should be wiped clean thoroughly after every media change with a lint-free cloth and isopropyl alcohol to prevent media slippage. Follow these steps to replace the media:

1. Lower rear cover. Use the ADVANCE MEDIA button on the control panel to move the desired media cutting area over the lower take-up Dancer arm.

2. Draw a knife across the top of the lower take-up Dancer arm to cut the media. Refer to ***Figure 2-17***, Cutting the Media.

Note: Always cut from the back of the printer to reduce the chance of damaging the Drive Roller and Vacuum Platen, and getting paper dust in the print heads.

3. Release both slider handles and remove take-up roll and supply media from drive hubs. Unroll Take-up Core to remove print(s) and store the extra supply media, if any, for later use.

4. Position upper slider for appropriate empty Take-up Core size and tighten handle. Install Take-up Core on upper slider and drive hub.

Note: Use the same length take-up core as the media supply roll size because using a 54" Take-up Core with 36" media supply causes paper alignment problems.

5. Position lower slider for new media paper size and tighten handle. Push LOAD MEDIA on the control panel. Load supply media on slider and drive hub as indicated in ***Figure 2-13***, Installing Media Roll.

6. Latch both Dancers on the left side. Push media over angled shelf so that it extends out the front as shown in ***Figure 2-14***.

Note: Damage may occur to Dancers when latching them in the middle or far right side instead of on the left.

7. Disengage the Pinch Rollers. Lift the front cover. Pull leading edge of media and feed 6 to 12 inches over the Drive Roller as shown in ***Figure 2-15***, Pulling Media Over drive Roller. Make sure the media is between the Heat Lamp and Drive Roller before pulling it around and onto the Take-up Core.

8. Use Jog Switch to advance media and tape to Take-up Core as indicated in ***Figure 2-16***, Attaching Media to Take-up Reel. Push Dancers on the left side to release them.

9. Make sure there is equal web tension between the drive hub and take-up hub. If the media is not properly aligned, then the image, media and carriage will be damaged during the next print job.

10. Engage the Pinch Rollers. Close all open doors, press the ACCEPT button to apply tension to the Take-up core, and put the printer back online.

11. Use the magnetic Vacuum Platen covers included with the printer to cover the exposed area when media width is less than 40 inches.

Note: Replace Vacuum Platen covers when the edges become curled, or print head damage may result.

Choosing the Proper Media

1. Press the LOAD MEDIA button at
   Media: xxx' Used: yyy'

You will then see
   LOAD MEDIA
   media monitor

2. At this menu, press the MENU button once for
   LOAD MEDIA
   new supply roll?

or twice for
   LOAD MEDIA
   reattach takeup?

When pressing the ACCEPT button at the new supply roll menu, the operator will be asked to print a Media Label. Use the +/- buttons to chose either on or off. The label, if chosen to be left on, will be printed on the media installed with estimated feet remaining, media thickness and media type.

Pressing the ACCEPT button at the reattach takeup menu will prompt the operator to install previously used media before moving on to the Media Monitor menu.

3. Press the ACCEPT button to go to
   MEDIA MONITOR
   P/N: (select media P/N or OTHER)

Use +/- keys to select Media P/N or Other as indicated in ***Figure 3-16***, Media & Ink Monitor Menus. Continue follow the various menus on the control panel under the Media Monitor menu and enter the appropriate data for the selected media before printing.

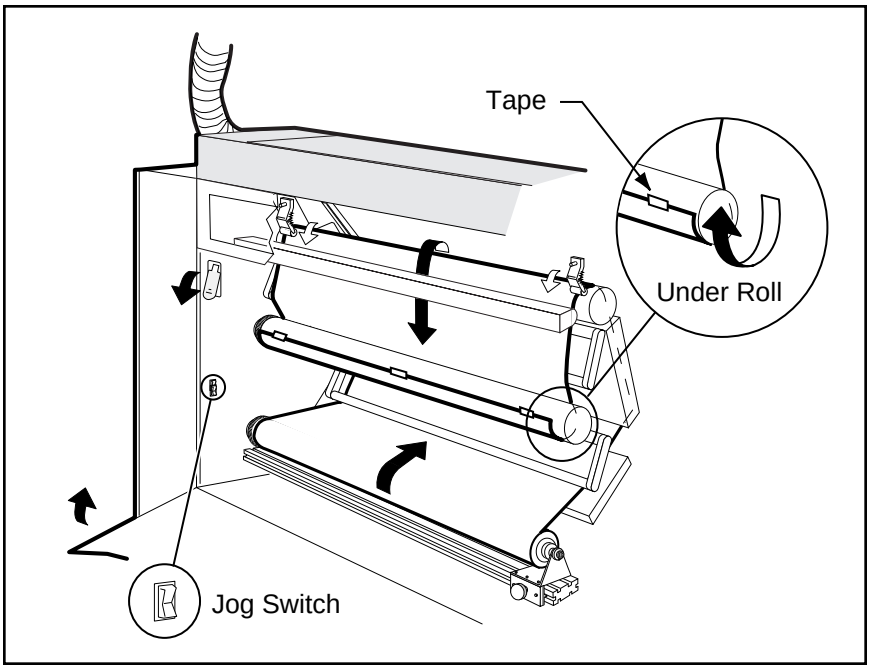


Figure 2-16 Attaching Media to Take-up Reel

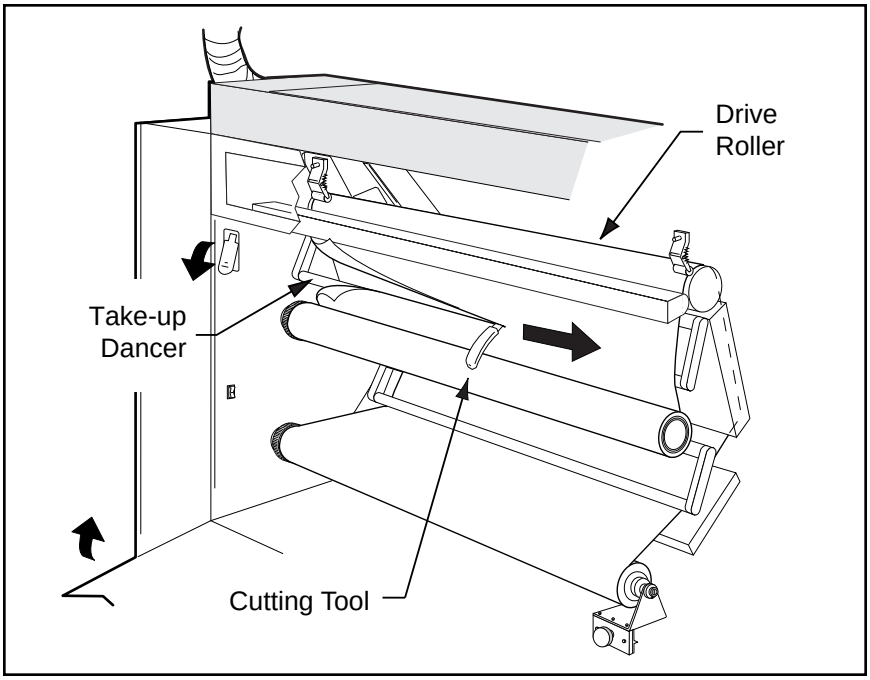


Figure 2-17 Cutting the Media

Test Prints

After you have installed the media and ink, run all test prints from the Operator Test Prints menu (***Figure 2-18***) in the control panel. This gets the ink flowing and verifies that the printer is working properly. Put aside a copy of the test prints for future reference. Refer to Chapter 3 for a description of the color bars and nozzle print menus.

The Configuration Print

The Configuration Print (***Figure 3-2***) contains useful information about the printer's configuration and status. Keep a recently run Configuration Print near the printer for reference, and print one at any time to monitor print quality. The Configuration Print describes the system configuration, listing the:

- Model
- Options installed
- Disk size
- Total count
- Service information
- Port setup
- Firmware revision
- Current count
- Print heads giga fires

Follow these steps to print the Configuration Print:

1. Press the MENU button twice at
   Media: xxx' Used: yyy'

2. Press the ACCEPT button once at
   MAIN MENU
   operator

You will then see
   OPERATOR
   print parameters

3. Press the MENU button once to go to
   OPERATOR
   Test prints

4. Press the ACCEPT button once at
   OPERATOR
   Test prints

5. Press the MENU button twice to go to
   TEST PRINTS
   configuration print

6. Press ACCEPT.

The Arizona DSP begins printing the Configuration Print, shown in ***Figure 3-2***. The LCD control panel window shows the online statistics.

Printing a Menu Tree

The Menu Tree Print (***Figure 2-19***)is a diagram that shows the available control panel commands and options. Sections of the Menu Tree are presented in this manual, and you can print out a complete menu tree by following these steps.

Refer to ***Figure 2-18***, Operator Test Prints Menu, for a diagram of the following steps to print a Menu Tree.

1. Return to the
   OPERATOR
   test prints

2. Press the ACCEPT button three times at
   OPERATOR
   test prints

You will then see
   TEST PRINTS
   print menu tree

3. Press ACCEPT.

The Arizona DSP begins printing the Menu Tree, cut the menu out and hang it up nearby and use it as a reference when navigating through the control panel. The LCD control panel window shows the online statistics.

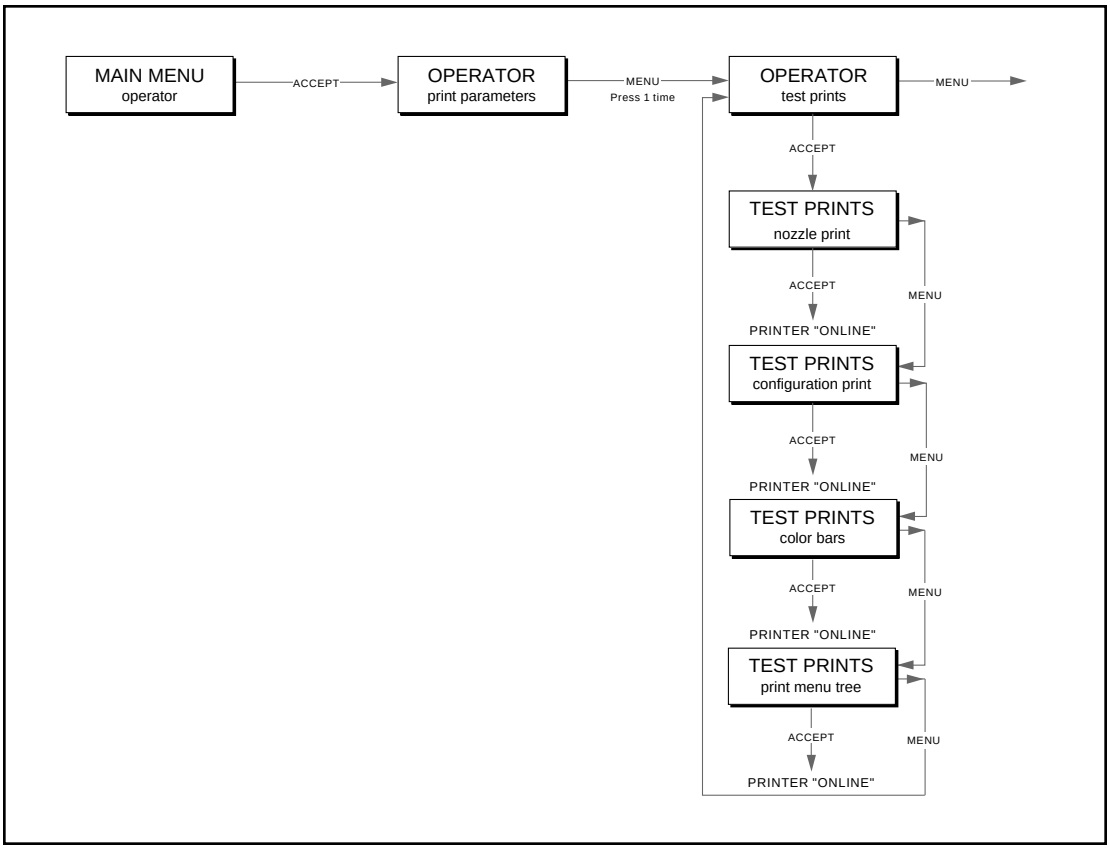


Figure 2-18 Operator Test Prints Menu

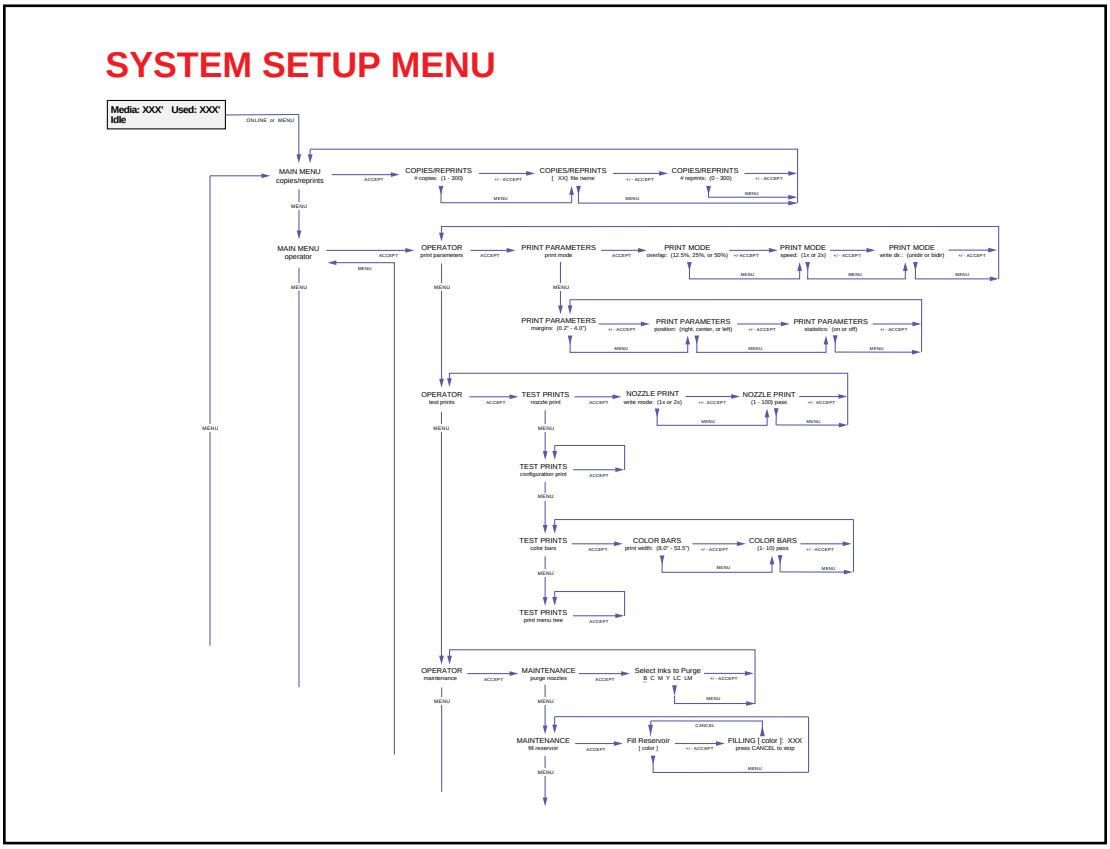


Figure 2-19 Menu Tree Print Sample

Chapter 3: Control Panel

Control Panel Overview

The Control Panel (***Figure 3-1***) sends and returns information to and from the Arizona DSP. Through the control panel, you set up the user-controllable options. These are organized into three major sections: Copies/Reprints, Operator, and Configure I/O. Print a Configuration Print (***Figure 3-2***) every time you change any settings through the control panel for reference to monitor print quality.

The MENU button lets you step through the available submenus in the menu tree without selecting them. When you locate the desired submenu, press ACCEPT. Also notice items that are starred (*), this signals the operator of current settings in the control panel. The sequence of selecting an option is as follows:

1. Press MENU to move through the Main Menu sub-menus until you locate the desired section.

2. Press ACCEPT to select that section.

3. Press MENU to move through the secondary menu options until you locate the desired option.

4. Press ACCEPT to select that option.

You are now ready to enter a value, or switch features on and off, using the +/– buttons. If you get lost in the menu tree, or decide that you don't want to accept a value you have entered, pressing CANCEL will get you back to the main menu or MENU to go to the next item without entering a value. If you have moved too far in the menu tree and passed an option you wanted to select, the LOAD MEDIA button will allow you to move back to the option you want.

Pressing the LOAD MEDIA button while the Online button is on prompts you to install a new roll of media.

The ADVANCE MEDIA button moves the media forward or backward as long as you press the + button or – button, respectively. A "media saver" option gives the operator the ability to set a gap between prints using the +/– buttons followed by pressing CANCEL and automatically begins the next print at the designated point.

The ERROR light on the control panel indicates that a system problem has occurred.

The MEDIA LOW light on the control panel indicates that media supply is nearing depletion (less than 50 ft.).

The INK LOW light on the control panel indicates that the ink supply is nearing depletion.

A blinking ON LINE light on the control panel LCD indicates a job is being processed. The LCD on the control panel displays the incoming and the printing image in percent as shown here:

Media: XXX' Used: XX'
PRN: [file name] XXX%

Pushing the ON LINE button during a print job will pause the Arizona DSP and allow you to open a door. Pushing it again when all the doors are closed will continue the job in progress. You'll also notice other LCD messages flashing like the maintenance cloth and print job percentage and Drying Lamp warming up.

Main Menu Overview

The Main Menu contains three sections:

Copies/Reprints, this section controls:

- The number of copies in a job
- The file name of a job
- The number of reprints of a job

Operator, this section controls most of the day-to-day operations of the printer, including:

- Align print heads
- Purging nozzles
- Setting print speed
- Setting media thickness
- Test prints and prints of the menu tree
- Setting the date and time
- Setting units and viewing your printer's status
- Printer maintenance

The Operator Menu has many options in this chapter, each set of options appears under its own title.

Configure I/O, this section controls the printer's interface to image servers. You can program:

- Parallel port speed and timeout period
- SCSI port address and timeout period
- Ethernet port address and host name

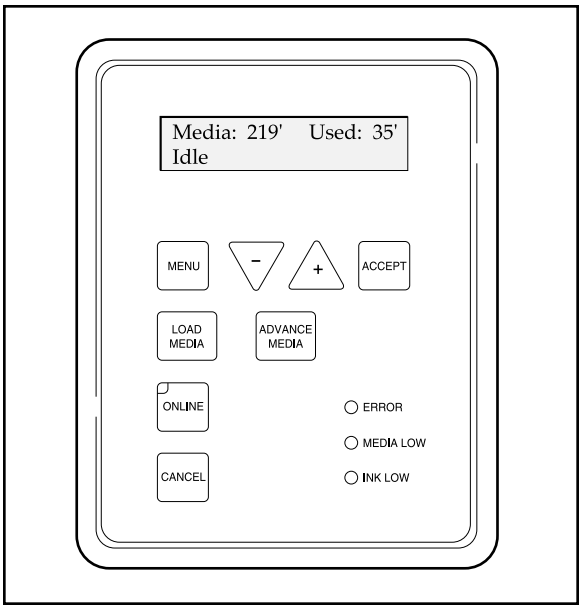


Figure 3-1 Control Panel

SYSTEM PARAMETERS

Printer model:	ARIZONA
Serial number:	301005
Firmware revision:	0.36b, Jan 5, 1999 16:05
Boot ROM:	0.05
Total prints:	745
Total media used:	705 ft
Ink waste bottle level:	419.20 ml

HARDWARE CONFIGURATION

Disk drive:	SEAGATE ST19171N
Disk memory:	9149MB
Disk data rate:	10 MB/s
Processor:	UVRC 1060CF step 5
RAM memory	32MB
DRAM type:	2Mx32 60ns
Head buffer SRAM type:	64Kx32
Hardware options:	SCSI, Ethernet, Spot1Color, Spot2 Color

HEAD INFORMATION

		Installed	Giga fires
Black	Top:	31-Dec-98	0.185
Black	Middle:	31-Dec-98	0.185
Black	Bottom:	31-Dec-98	0.185
Cyan	Top:	31-Dec-98	0.340
Cyan	Middle:	31-Dec-98	15.357
Cyan	Bottom:	31-Dec-98	17.367
Magenta	Top:	31-Dec-98	19.494
Magenta	Middle:	31-Dec-98	21.494
Magenta	Bottom:	31-Dec-98	23.494
Yellow	Top:	31-Dec-98	6.457
Yellow	Middle:	31-Dec-98	8.457
Yellow	Bottom:	31-Dec-98	10.467
LD Cyan	Top:	31-Dec-98	6.457
LD Cyan	Middle:	31-Dec-98	8.457
LD Cyan	Bottom:	31-Dec-98	10.467
LD Mag.	Top:	31-Dec-98	6.457
LD Mag.	Middle:	31-Dec-98	8.457
LD Mag.	Bottom:	31-Dec-98	10.467

OPERATOR

Number of copies:	1
Print mode:	
Overlap:	12.5%
Speed:	2x
Write direction:	bidir
Margins:	0.60"
Position:	Center
Statistics:	On
Media type:	Paper
Media thickness:	10.25 mil
Units:	English

CONFIGURE I/O

Active port:	SCSI
Parallel:	
Mode:	Fast
Timeout:	60 sec.
SCSI:	
SCSI address:	6
Timeout:	60 sec.
Ethernet:	
Hostname:	colorstation
Internet address:	192.9.200.1
Hardware address:	00 : 40 : 21 : 04 : 07 : CD
Subnet mass:	255 . 255 . 255 . 0
Serial:	
Baud rate:	9600
Data bits:	8
Parity:	None
Handshake type:	XON/XOFF
Timeout:	60 sec.

MACHINE SETUP

Carriage setup:	1x	2x	Other
Left to right offset:	0.72	1.20	
Acceleration (ms):	108	108	152
Speed: (ips)	15.8	31.5	24.0
Media drive setup:			
Media width:	54.0"		
line frequency:	60Hz		
Drive roll diameter:	3.1735"		
Dancer positions:	Empty		Full
Supply:	31		+40
Takeup:	101		+60
Move Table:	Fast		
Advance speed:	3.0 ips		
Load speed:	2.5 ips		
Park delay:	5 min		
Head setup:			

Head voltage:	Top	Middle	Bottom
Black:	155	160	160
Cyan:	160	160	160
Magenta:	160	150	150
Yellow:	160	160	160
LD Cyan:	165	155	155
LD Mag.:	145	135	135

Head delay:		1x		2x	
		L—>R	L<—R	L—>R	L<—R
Black	Top:	0.00	0.00	-0.50	0.50
Black	Middle:	0.00	0.00	0.00	0.00
Black	Bottom:	0.00	0.00	0.00	0.00
Cyan	Top:	0.00	0.00	0.00	0.00
Cyan	Middle:	0.00	0.00	0.00	0.00
Cyan	Bottom:	0.00	0.00	0.00	0.00
Magenta	Top:	0.00	0.00	0.00	0.00
Magenta	Middle:	0.00	0.00	0.00	0.00
Magenta	Bottom:	0.00	0.00	0.00	0.00
Yellow	Top:	0.00	0.00	0.00	0.00
Yellow	Middle:	0.00	0.00	0.00	0.00
Yellow	Bottom:	0.00	0.00	0.00	0.00
LD Cyan	Top:	0.00	0.00	0.00	0.00
LD Cyan	Middle:	0.00	0.00	0.00	0.00
LD Cyan	Bottom:	0.00	0.00	0.00	0.00
LD Mag.	Top:	0.00	0.00	0.00	0.00
LD Mag.	Middle:	0.00	0.00	0.00	0.00
LD Mag.	Bottom:	0.00	0.00	0.00	0.00

Ink fill setup:				
Mode:	Any time			
Ink levels:	Empty	Full	Low	High
Black:	80	85	10	255
Cyan:	80	85	10	255
Magenta:	80	85	10	255
Yellow:	80	85	10	255
LD Cyan:	80	85	10	255
LD Mag.:	80	85	10	255
Fill timeout:	45 seconds			
Wipe interval:	300MF			
Wipes per purge:	0			
Max. purge hours:	0.0			
Maint. Cloth setup:				
Core diameter:	1.3			
Roll diameter:	4.0			
Core reading:	225			
Roll Reading:	37			
Color setup:				
Mode:	Low Density			
Positions:	Yellow			
	LD Mag.			
	Magenta			
	LD Cyan			
	Cyan			
	Black			

SAMPLE ONLY

Figure 3-2 Configuration Print

Copies/Reprints Menu

The Copies/Reprints Menu (***Figure 3-3***) lets you specify the number of copies or reprints made during a single printing job. You can also reprint copies of a previous printed image. An on-board hard drive allows for multiple images to be saved and accessed through the control panel without reprocessing and re-sending the print from the processing workstation.

Remember that if you are using PosterShop software settings, the software overrides the settings in the printer control panel. If a reprinted image does not look the same as the PosterShop settings, try entering the statistics of the original printed image into the printer control panel (i.e. overlap, print speed and write dir.).

Printing Multiple Copies or Reprints

Before you send the print from the server, you can set the Arizona DSP to print more than a single copy:

1. Press the MENU button once at
   Media: xxx' Used: yyy'

2. Press the ACCEPT button at
   MAIN MENU
   copies/reprints

You will then see
   COPIES/REPRINTS
   # copies: XXX

Select the total number of copies (1 - 300) with the +/– buttons, then press ACCEPT to go to
   COPIES/REPRINTS
   [XX] file name

3. Choose a stored file name to print and press ACCEPT to go to
   COPIES/REPRINTS
   # reprints: XXX

4. Press ACCEPT.

Reprint Copies of a Previously Printed Image

To reprint copies of a previously printed image:

1. Press MENU or ACCEPT to go to
   COPIES/REPRINTS
   [XX] file name

2. Press MENU or ACCEPT to go to
   COPIES/REPRINTS
   # reprints: XXX

Select the total number of reprints (0 - 300) with the +/– buttons, then press ACCEPT.

Note: Use the Print Parameters menu to control the output quality of the images already stored in the printer.

3. Press ACCEPT on the control panel and the printer begins printing the selected image.

Cancelling a Print

Once a print has been sent from the computer or through the control panel, you can choose to continue the print or cancel it. Follow the steps below to cancel the print:

1. Press the CANCEL and MINUS (-) button on the control panel at the same time to cancel the print.

2. View the control panel LCD for
   Media: xxx' Used: yyy'
   CANCELLING PRINT

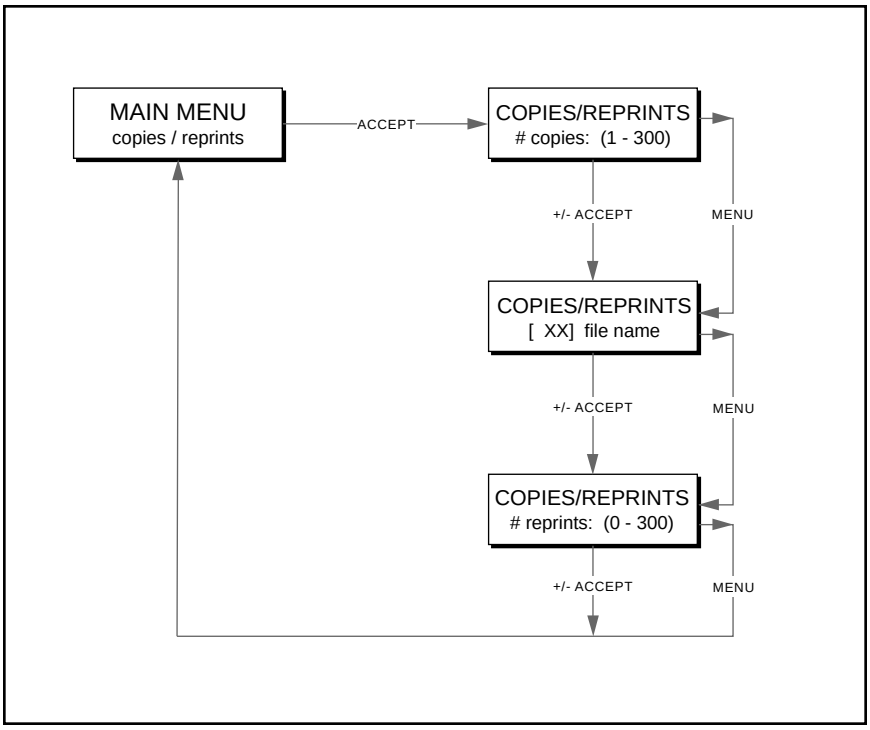


Figure 3-3 Copies/Reprints Menu

Print Parameters Menu

The Print Parameters Menu (***Figure 3-4***) sets up the basis of the print job: the controls for the image contrast and print mode including pass (overlap), speed, strikes, write direction, margins, and statistics for the job. The Print Parameters menu is part of the Operator submenu.

Print Parameters

Follow these steps to use the Print Parameters menus:

1. Press the MENU button twice time at
   Media: xxx' Used: yyy'

2. Press the ACCEPT button at
   MAIN MENU
   operator

You will then see
   OPERATOR
   print parameters

From this point, pressing ACCEPT "stores" the value of the current option and moves you along to the next. You can also skip from one option to the next by pressing MENU.

Print Mode

Follow these steps to use the Print Mode menu.

1. At the
   PRINT PARAMETERS
   print mode

2. Press ACCEPT to go to
   PRINT MODE
   overlap: (4 or 8)-pass

Use the +/- buttons to select the value 4-pass or 8-pass.

3. Press ACCEPT to go to
   PRINT MODE
   speed: (1x or 2x)

Use the +/- buttons to select the desired value (single or double velocity).

4. Press ACCEPT to go to
   PRINT MODE
   strikes: (1 or 2)

Use the +/- buttons to select the desired value (single or double strike).

5. Press ACCEPT to go to
   PRINT MODE
   write dir.: (unidir or bidir)

Use the +/- buttons to select the desired direction. They are uni-directional (unidir) and bi-directional (bidir).

Margins and Statistics

1. Press MENU at the
   PRINT PARAMETERS
   print mode

You will then see
   PRINT PARAMETERS
   margins: X.X"

Use the +/- buttons to select the desired margin value (0.2" - 4.0") for a job.

2. Press ACCEPT to go to
   PRINT PARAMETERS
   position: right

Use the +/- buttons to select the desired image location (right, center, or left) on media for a job, then press ACCEPT to go to
   PRINT PARAMETERS
   Statistics Menu: (on or off)

When the Statistics Menu is set to ON, the printer prints a set of job statistics in the white space below outside the print area. Use the +/- buttons to turn statistics on or off.

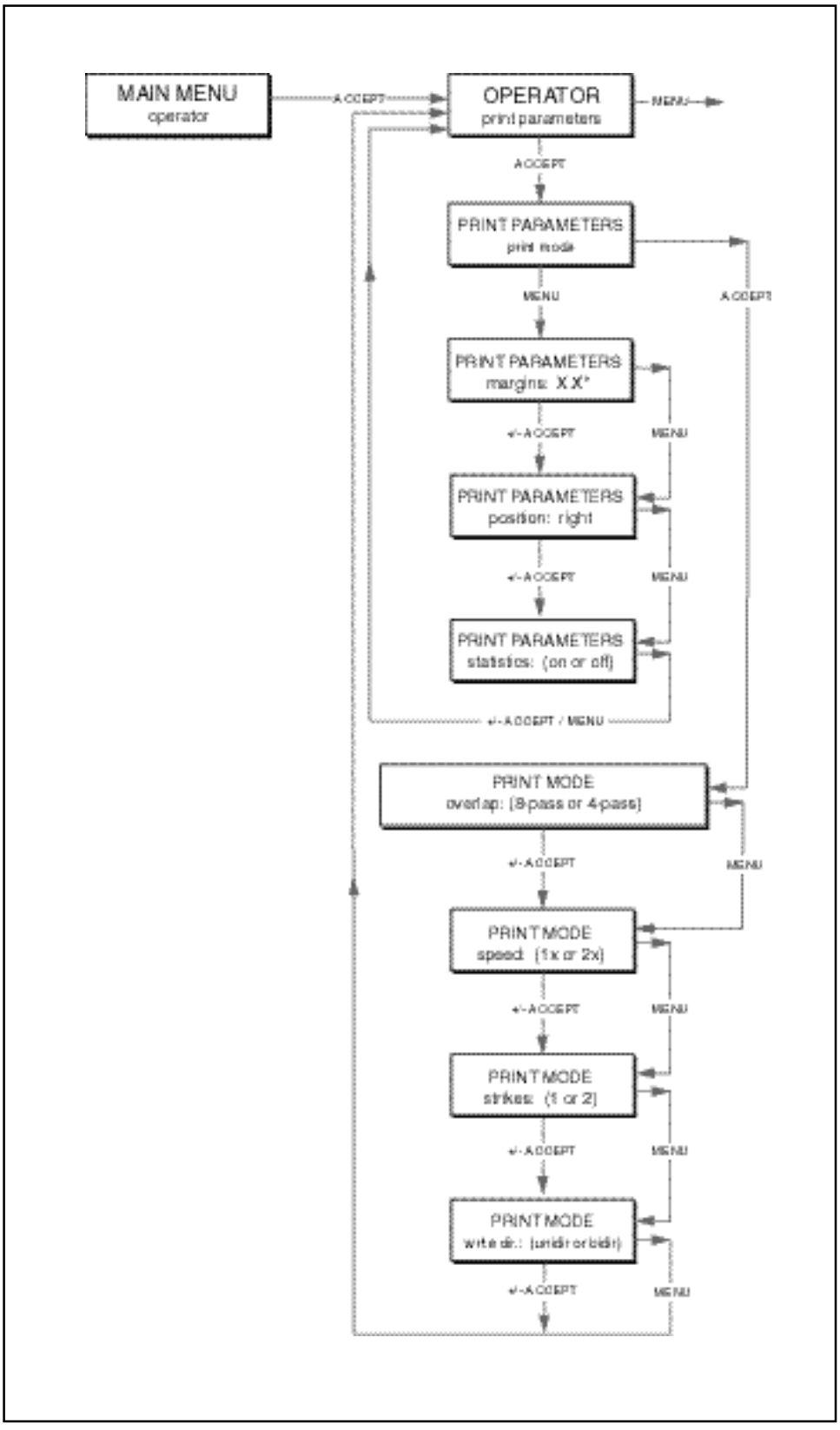


Figure 3-4 Print Parameters Menu

Test Prints Menu

The Test Prints Menu (***Figure 3-5***) lets you print four documents stored in the Arizona DSP: the nozzle print, configuration print, color bars print and menu tree print. The Test Prints menu is part of the Operator submenu.

Nozzle Print

The Nozzle Print provides you with information to calibrate and adjust your Arizona DSP print heads, see ***Figure 3-7***, Nozzle Print Menu. Follow these steps to print the Nozzle Print:

1. Press the MENU button one time at
   Media: xxx' Used: yyy'

2. Press the ACCEPT button at
   MAIN MENU
   operator

You will then see
   OPERATOR
   print parameters

3. Press MENU one time to go to
   OPERATOR
   test prints

4. Press ACCEPT to go to
   TEST PRINTS
   nozzle print

5. Press ACCEPT to go to
   NOZZLE PRINT
   write mode: (1x or 2x)

6. Press ACCEPT again to go to
   NOZZLE PRINT
   XXX pass

7. Use the +/- buttons to select the number of passes(1 - 100).

8. Press ACCEPT. The Arizona DSP begins printing the Nozzle Print. You can choose between 1-100 passes. Selecting between 1-5 passes should be adequate. The LCD control panel window shows the online statistics.

Color Bars

This menu prints a set of eleven color bars starting with Light Magenta and ending with Black. Use the Color Bars to diagnose horizontal line dropout and/or calibrate printer inks to optimal performance.

Follow these steps to print the Color Bars:

1. Press the MENU button twice at
   TEST PRINTS
   nozzle print

You will go to
   TEST PRINTS
   color bars

2. Press ACCEPT to go to
   COLOR BARS
   print width: XX.X"

Use the +/- buttons to set print width (8.0" - 34.5") in increments of .50 inches and press ACCEPT to go to
   COLOR BARS
   XX pass

Use the +/- buttons to select the number of passes(1 - 10).

3. Press ACCEPT to return to
   TEST PRINTS
   color bars

The Arizona DSP begins printing the color bars, as indicated in ***Figure 3-6***, Color Bars Print Sample. The LCD control panel window shows the online statistics.

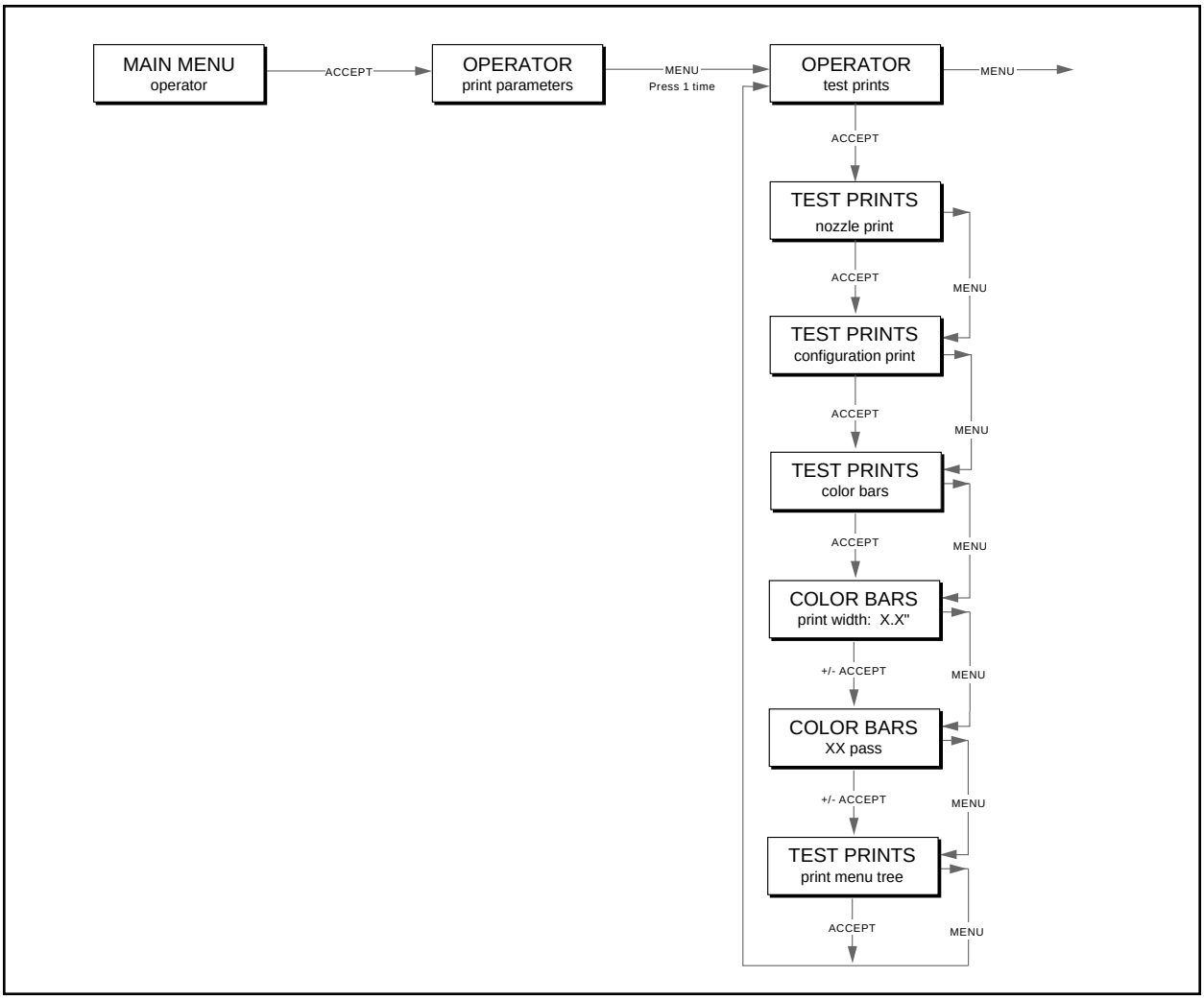


Figure 3-5 Test Prints Menu

Figure 3-6 Color Bars Print Sample

Maintenance Menu

The Maintenance menu (***Figure 3-8***) is part of the Operator submenu, which contains several menus that enable the operator to obtain best printer performance. These menu items are important to do often before and after printing on the Arizona DSP. Also, allow the printer to remain on at all times in order for the automatic maintenance routines to continue during idle. If you can't clear nozzle dropout, use the PosterShop PiezoRx Utility. This utility allows the operator to identify and disable incorrectly functioning nozzles (nibs) in the printer print heads. Doing so enables the printer to compensate for the misfunctioning nozzle so that the print quality is not significantly altered.

Purge Nozzles

Nozzles may misfire or dropout due to insufficient purges, see ***Figure 3-7*** to identify misfires on the Nozzle Print. Purging more than three times in a row will increase the purge time into the Blotting Cloth to 1.8 seconds. Each purge will print the Nozzle Print, so rewind media and hit CANCEL if you don't want to waste media bringing up the printer. Follow these steps to use the Purge Nozzles menu:

1. Press the MENU button twice at
   Media: xxx' Used: yyy'

2. Press the ACCEPT button at
   MAIN MENU
   operator

   You will then see
   OPERATOR
   print parameters

3. Press the MENU twice at the
   OPERATOR
   print parameters

   You will then see
   OPERATOR
   maintenance

4. Press the ACCEPT button at
   OPERATOR
   maintenance

   You will then see
   MAINTENANCE
   purge nozzle

5. Press the ACCEPT button at
   MAINTENANCE
   purge nozzle

   You will then see
   SELECT INKS TO PURGE
   B C M Y LC LM

Use the +/- buttons to select the desired inks to purge, then press ACCEPT to go back to the OPERATOR MAINTENANCE menu.

Access Carriage

The Access Carriage menu enables the operator to position the Carriage for access at three locations along the Vacuum Platen. These positions are necessary when the operator must conduct maintenance procedures on the Print Heads, Print Head Nozzles, Carriage Front Plate, Capping Station and Ink Reservoir vent holes. Remove media first before accessing the Carriage to the center position for long periods of time. The Take-up and Supply Dancers will relax and the media may come in contact with the Carriage Front Plate. Use the control panel and follow the steps below to access the Carriage:

1. Go back to
   OPERATOR
   maintenance

2. Press the ACCEPT button and you will then see
   MAINTENANCE
   purge nozzle

3. Press the MENU again to view
   MAINTENANCE
   access carriage

4. Press the ACCEPT button and you will then see
   MAINTENANCE
   Center Carriage OK?

Pressing the ACCEPT button here will access the Carriage and position it at the center of the Vacuum Platen. Refer to the Routine Maintenance Schedule and maintenance procedures in Chapter 4 and at the back of this guide when servicing the Carriage at this position.

5. After pressing the ACCEPT or MENU button, the next menu automatically appears called
   MAINTENANCE
   Carriage Left OK?

Pressing the ACCEPT button here will access the Carriage and position it over the Maintenance Cloth Station. Refer to the Routine Maintenance Schedule and maintenance procedures in Chapter 4 and at the back of this guide when servicing the Carriage at this position.

6. After pressing the ACCEPT or MENU button, the next menu automatically appears called
   MAINTENANCE
   Park Carriage OK?

Pressing the ACCEPT button here will reposition the Carriage at the Capping Station (home position). After pressing the ACCEPT or MENU button here, the menu will return to the Maintenance Access Carriage menu.

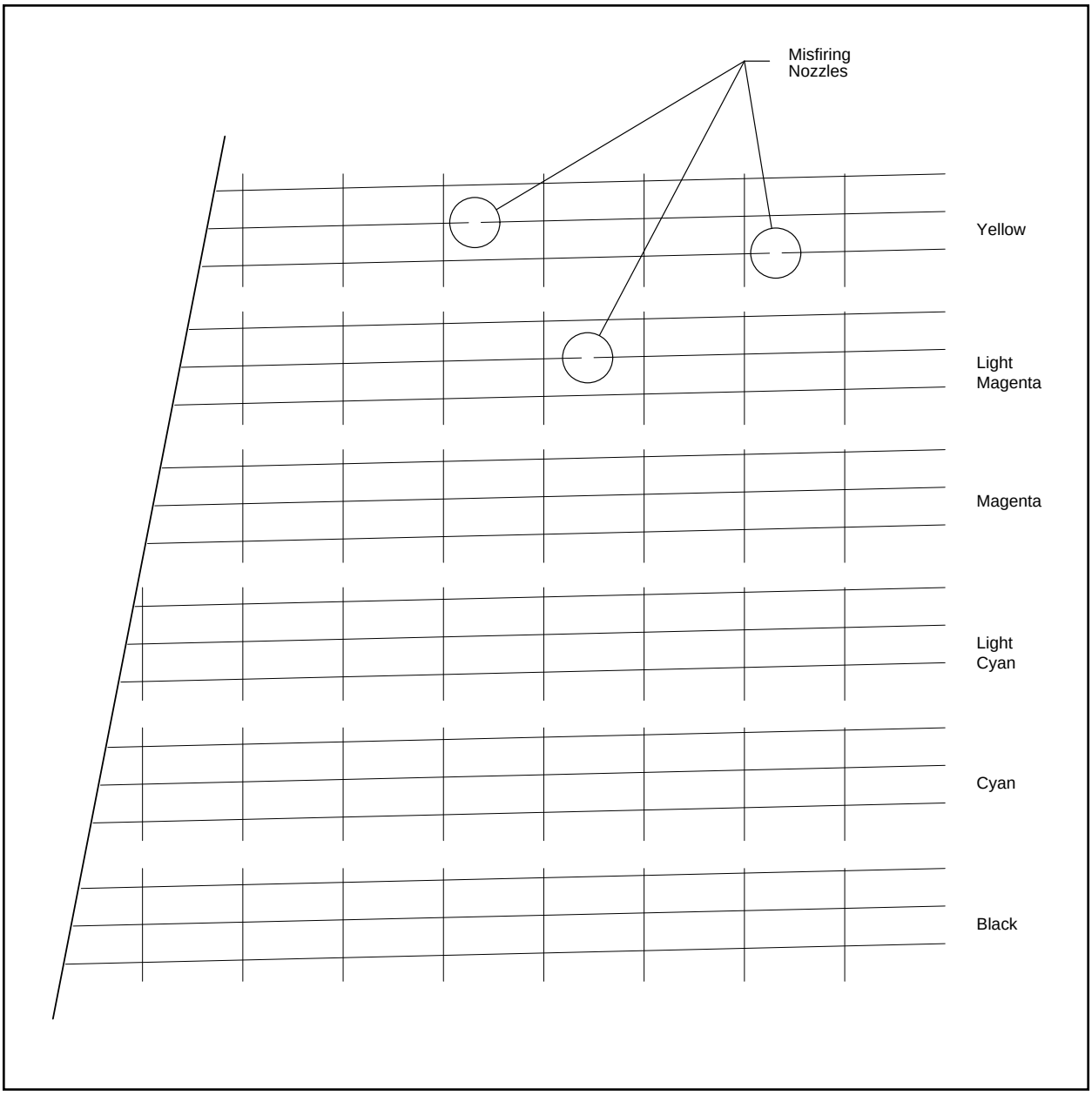


Figure 3-7 Nozzle Print Menu

Fill Reservoir

The printer firmware keeps track of all ink reservoir levels. When an ink reservoir becomes low, an error message is displayed on the control panel instructing the operator to fill it. Follow the steps below to fill an ink reservoir when asked by the control panel to do so:

1. Go back to
   OPERATOR
   maintenance

2. Press the ACCEPT button and you will then see
   MAINTENANCE
   purge nozzle

3. Press the MENU button twice and you will then see
   MAINTENANCE
   fill reservoir

4. Press the ACCEPT button at
   MAINTENANCE
   fill reservoir

You will then see
FILL RESERVOIR
[color]

Use the +/- buttons to select the desired color to fill the ink juice box, then press ACCEPT to see
FILLING [color]: XXX
press CANCEL to stop

5. Press the CANCEL button to go back to FILL RESERVOIR menu to choose another ink color.

Replace Waste Bottle

The printer firmware keeps track of the waste bottle ink level in milliliters(ml). When the waste bottle reaches capacity, an error message is displayed on the control panel instructing the operator to replace it. Follow these steps to replace the printer ink waste bottle when asked by the control panel to do so:

1. Go to
   OPERATOR
   maintenance

2. Press the ACCEPT button and you will then see
   MAINTENANCE
   purge nozzle

3. Press the MENU button four times to view
   SERVICE FUNCTIONS
   replace waste bottle

4. Press the ACCEPT button to go to
   REPLACE WASTE BOTTLE
   XXX.XX ml Accept?

Before pressing ACCEPT, replace the ink waste bottle in the right equipment bay. Use protective gloves when removing the cap and installing a new bottle. Once the fresh waste bottle is installed, press ACCEPT to clear (zero out) the waste bottle counter and to return to the SERVICE FUNCTIONS menu.

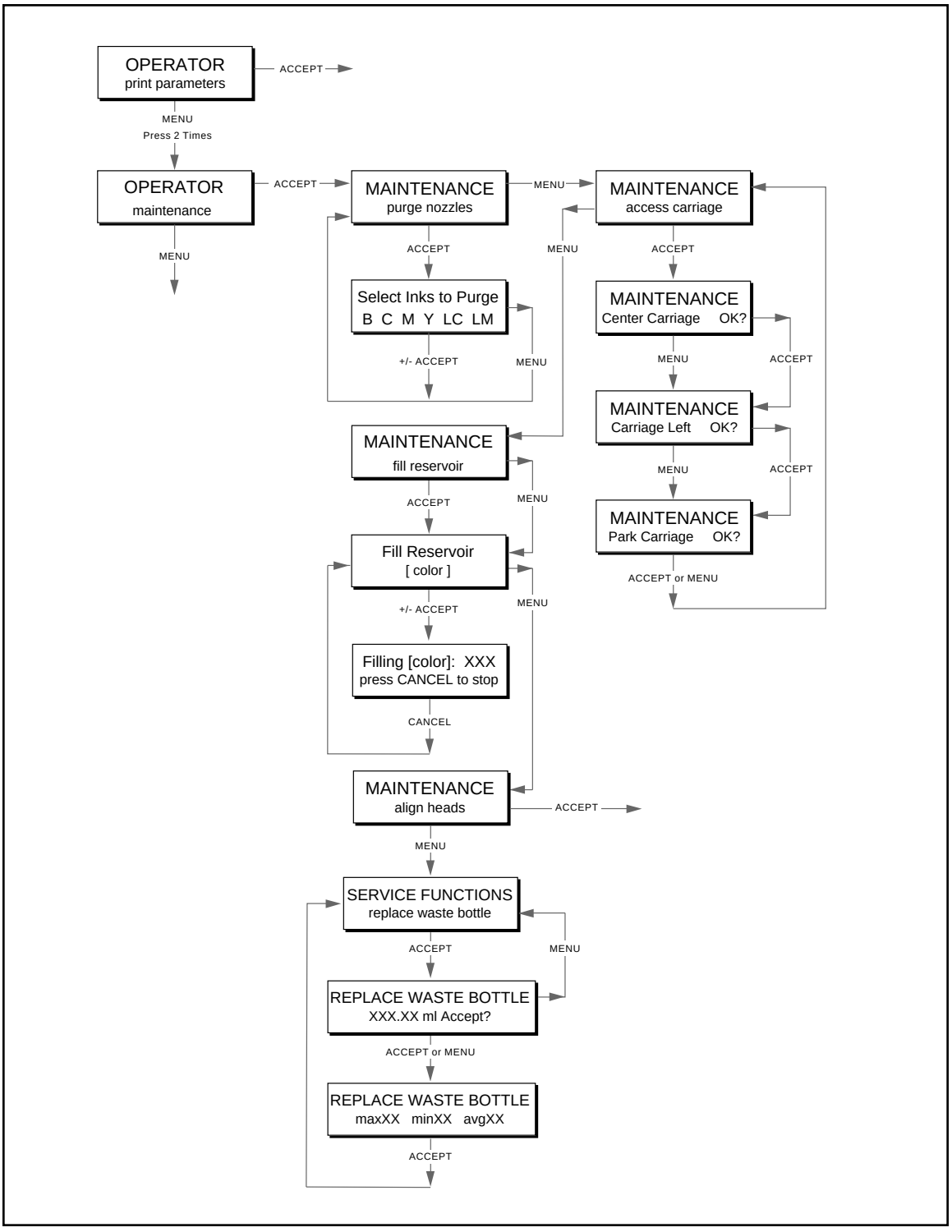


Figure 3-8 Maintenance Menu

Align Heads

Top Head Align

The Align Heads Menu (***Figure 3-9***) under the Maintenance Menu consists of three alignment steps. Make sure the correct media thickness is selected when attempting to align the print heads to the current media installed. Check media thickness after every media change to ensure consistent head alignment and to prevent recalibration time and media waste. Each alignment menu must be viewed and/or adjusted as a group when attempting to align the print heads.

1. Go back to
   OPERATOR
   maintenance

2. Press the ACCEPT button and you will then see
   MAINTENANCE
   purge nozzle

3. Press the MENU button 5 times to view
   MAINTENANCE
   align heads

4. Press the ACCEPT button to go to
   ALIGN HEADS
   top head align

Use the MENU button to select either the top head alignment, middle head alignment or bidir head alignment.

5. Press the ACCEPT button to go to
   TOP HEAD ALIGN
   print head align

Pressing ACCEPT here will enable the operator to print the "Top Head Alignment Print" (***Figure 3-10***) and change the settings for the top and bottom heads. Viewing the print sample, you'll notice that the top print head of each color will print first followed by the bottom head. Once all vertical lines have been printed, the printer will label each with the "current" setting and the rest from -6 to 6 as shown in ***Figure 3-11***.

It is the operator's responsibility to determine which vertical row of black, cyan, magenta, yellow, ld cyan and ld magenta lines is perfectly straight or leave the current setting "as is." For example, if the black row of vertical lines in position -3 is straighter than the current row, then use the control panel key pad to select -3 as the new calibration of the print heads. The operator must continue on to the next two menus, Middle Head Align and Bidir Head Align, to complete and accurately calibrate the heads.

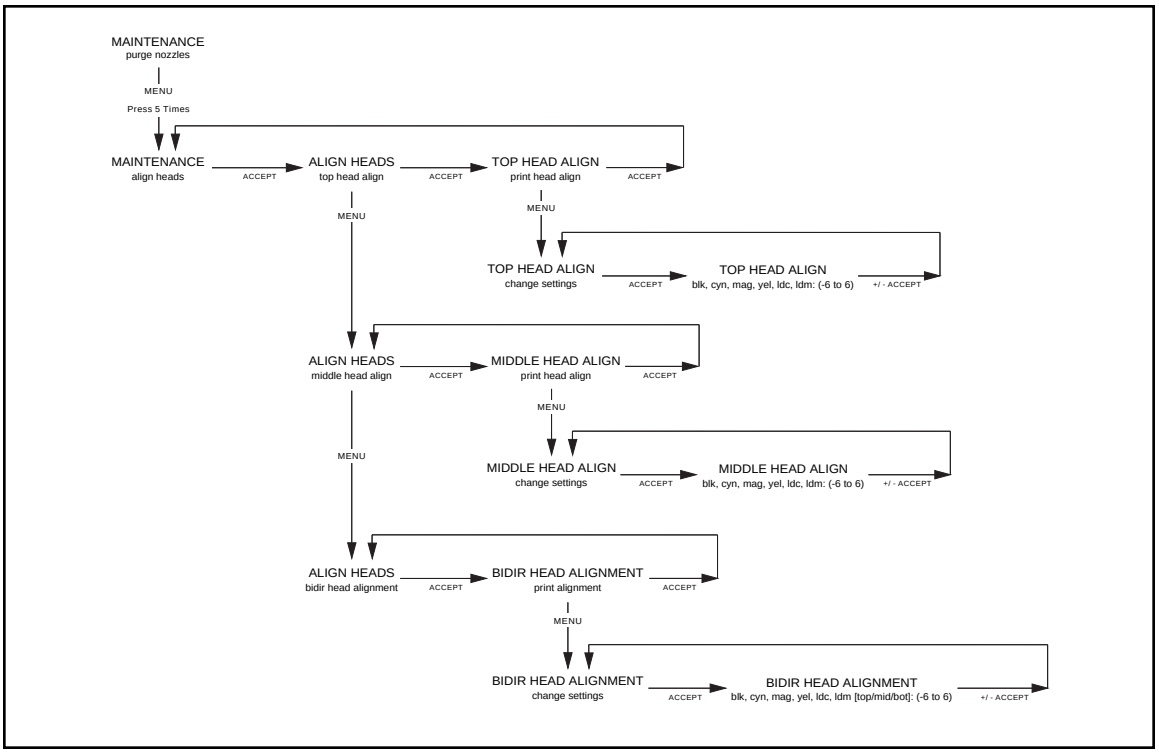


Figure 3-9 Align Heads Menu

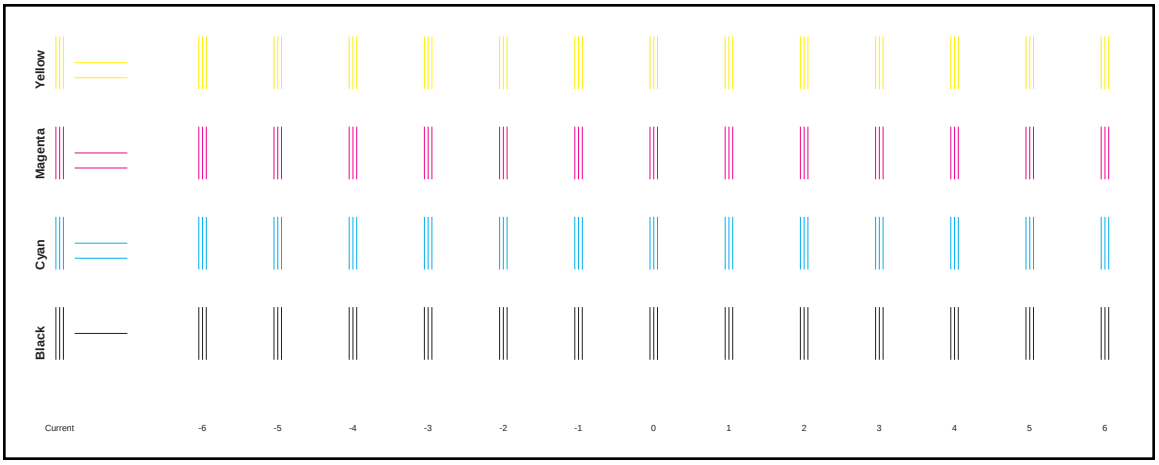


Figure 3-10 Top Head Alignment Print

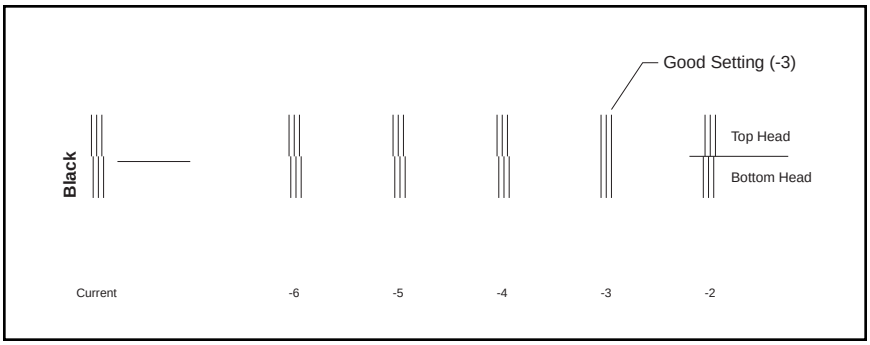


Figure 3-11 Top Head Alignment Print Sample

Middle Head Align

1. Go back to
   OPERATOR
   maintenance

2. Press the ACCEPT button and you will then see
   MAINTENANCE
   purge nozzle

3. Press the MENU button 5 times to view
   MAINTENANCE
   align heads

4. Press the ACCEPT button to go to
   ALIGN HEADS
   top head align

Press the MENU button once to select the middle head alignment.

5. Press the ACCEPT button to go to
   MIDDLE HEAD ALIGN
   print head align

Pressing ACCEPT here will enable the operator to print the "Middle Head Alignment Print" (***Figure 3-12***) and change the settings for the middle head. The vertical lines in this print are a combination of the top middle and bottom heads with the majority being the middle head as shown in ***Figure 3-13***. Choose the best setting from -6 to 6 or leave the current setting "as is." For example, if the black row of vertical lines in position -3 is straighter than the current row, then use the control panel key pad to select -3 as the new calibration of the print heads. The operator must continue on to the next menu, the Bidir Head Alignment, to complete and accurately calibrate all heads.

Bidir Head Align

1. Go back to
   OPERATOR
   maintenance

2. Press the ACCEPT button and you will then see
   MAINTENANCE
   purge nozzle

3. Press the MENU button 5 times to view
   MAINTENANCE
   align heads

4. Press the ACCEPT button to go to
   ALIGN HEADS
   top head align

Press the MENU button twice to select the bidir head alignment.

5. Press the ACCEPT button to go to
   BIDIR HEAD ALIGN
   print head align

Pressing ACCEPT here will enable the operator to print the "Bidir Head Alignment Print" (***Figure 3-14***) and change the Left to Right and Right to Left alignment settings for the top, middle and bottom heads. Once all vertical lines have been printed, the printer will label them with "current" and from -6 to 6 as shown in ***Figure 3-15***. It's the operators responsibility to determine which row of black, cyan, magenta, yellow, ld cyan and ld magenta lines for each head is perfectly straight or leave the current setting "as is."

For example, take a look at the black row of vertical lines in position -3. There are three columns of lines, each representing the top, middle and bottom head. If the top head vertical lines are straightest in this position as compared to the rest of the black row, then select it on the control panel. The control panel will move to the next menu which is the black middle head. Look along the row for the straightest lines in the row. Choose the best lines and use the control panel to change the current setting or leave it "as is." Do this for each print head. When finished, the operator will have completed the calibration process. Reprint images from the control panel to evaluate any differences in image quality.

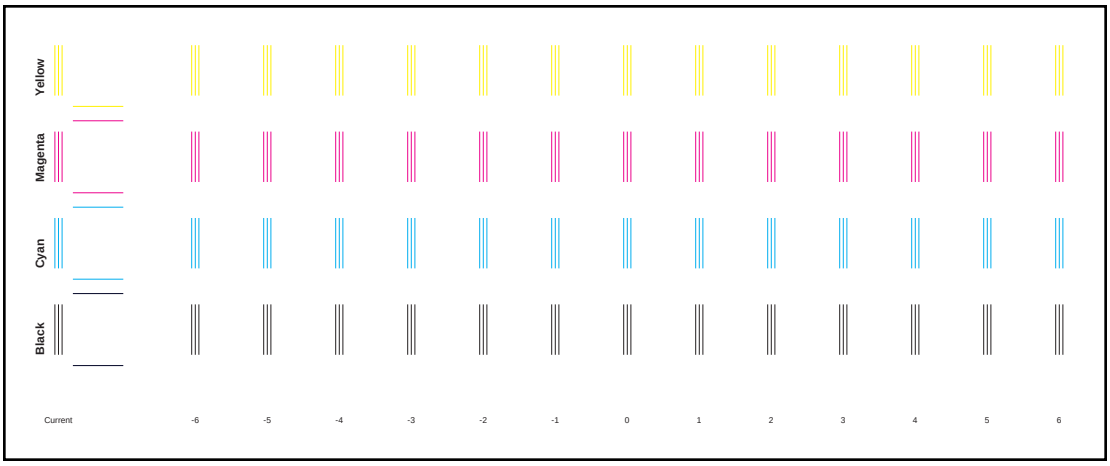


Figure 3-12 Middle Head Alignment Print

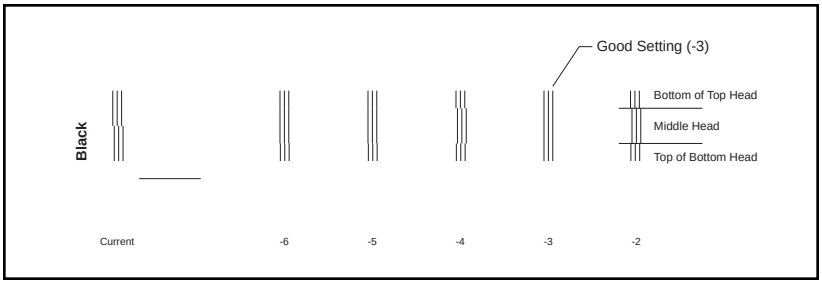


Figure 3-13 Middle Head Alignment Print Sample

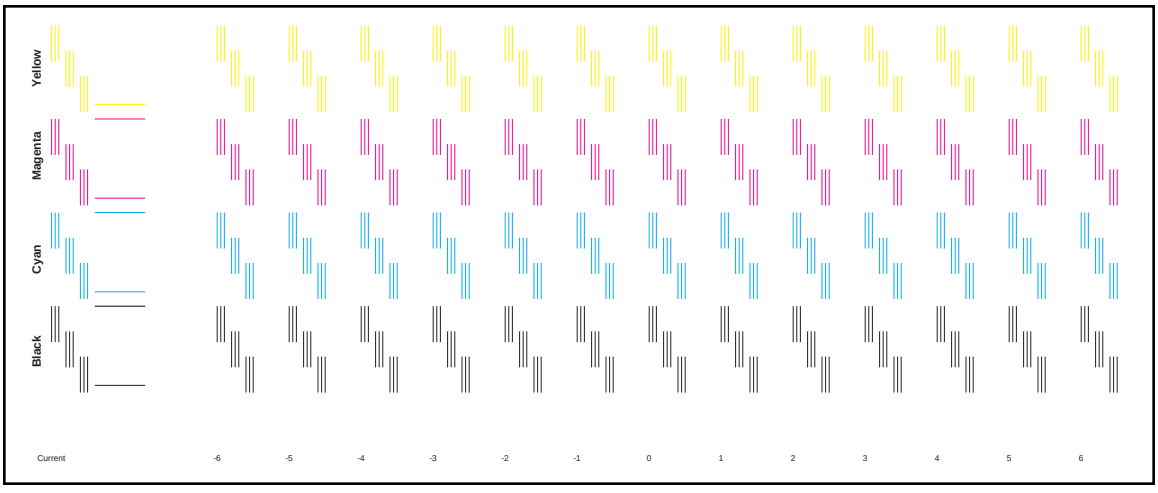


Figure 3-14 Bidir Head Alignment Print

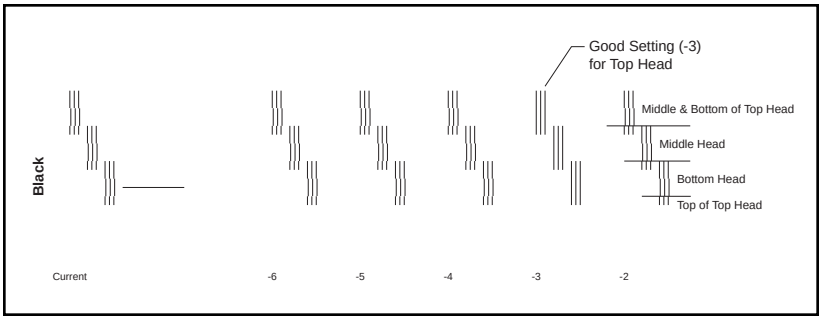


Figure 3-15 Bidir Head Alignment Print Sample

Media Monitor Menu

The Media Monitor menu (***Figure 3-16***) is part of the Operator submenu. When installing or replacing media or ink, the operator is required to step through various menus specifying either ink bottle type or media. Under the Media Monitor menu, the operator can chose a media P/N or other.

Once selecting the media P/N, press the ACCEPT key and continue pressing it through the thickness, supply core dia., takeup core dia., print temp and dry time menus because each will have been automatically set. When selecting Other, an additional menu called Blower Setup appears. The Blower Speed for narrow and wide media will need to be specified. Refer to the media data sheets for all the recommended settings mentioned above.

Entering the Type of Media

The label on the end of the media roll box states what type of media it is, part number(P/N) and the thickness in mils. Just enter the media P/N to automatically set the other supporting menus correctly. Use the steps below to correctly enter the settings for media P/N:

1. Press the LOAD MEDIA button at
   Media: xxx' Used: yyy'

You will then see
   LOAD MEDIA
   media monitor

2. At this menu, press the MENU button once for
   LOAD MEDIA
   new supply roll?

or twice for
   LOAD MEDIA
   reattach takeup?

When pressing the ACCEPT button at the new supply roll menu, the operator will be asked to print a Media Label. Use the +/- buttons to chose either on or off. The label, if chosen to be left on, will be printed on the media installed with estimated feet remaining, media thickness and media type.

Pressing the ACCEPT button at the reattach takeup menu will prompt the operator to install previously used media before moving on to the Media Monitor menu.

3. Press the ACCEPT button to go to
   MEDIA MONITOR
   P/N: (select media P/N or OTHER)

Use the +/– buttons to select the media P/N or OTHER, then press ACCEPT to go to
   MEDIA MONITOR
   P/N: (Paper, Vinyl or PerfVinyl)

When selecting Other, refer to the media data sheets for the recommended settings for the Blower Setup menu, then press ACCEPT to go to
   MEDIA MONITOR
   thickness: (2.00 - 26.00) mil

Use the +/– buttons to enter the media thickness in mils.

4. Press ACCEPT to go to
   MEDIA MONITOR
   Supply Core: (Std 3.2" or 3M 3.5")

Use the +/– buttons to select either Standard 3.2" or 3M 3.50" Core Diameter.

5. Press ACCEPT to go to
   MEDIA MONITOR
   Takeup Core: (Std 3.2" or 3M 3.5")

Use the +/– buttons to select either Standard 3.2" or 3M 3.50" Core Diameter.

6. Press ACCEPT to go to
   MEDIA PRINT TEMP.
   Print Temp: X.X degC

Use the +/– buttons to chose the Print Temperature for the selected media P/N.

7. Press ACCEPT to go to
   MEDIA DRY TIME
   Dry Time: X.X sec

Use the +/– buttons to chose the Dry Time for the selected media P/N, then press ACCEPT to go back to the idle menu.

Entering the Type of Ink Bottle

The color of the ink bottle is on the side label. Pay particular attention to the cyans and magentas, as the light versions may appear dark while in the bottle. Check the MSDS data sheets for proper disposal and any warning information. Use the control panel key pad and follow the steps below to install an ink bottle corresponding to the control panel LCD message:

1. Locate the Ink Bottle color as designated by the control panel or visually check.

2. Remove the Quick Coupler from the Ink Bottle.

3. Remove and discard Ink Bottle.

4. Follow instructions on the control panel LCD and use the key pad to install an ink bottle as shown in ***Figure 2-12***.

5. Place new Ink Bottle on metal shelf and reattach coupler with appropriate pre-stained tubing.

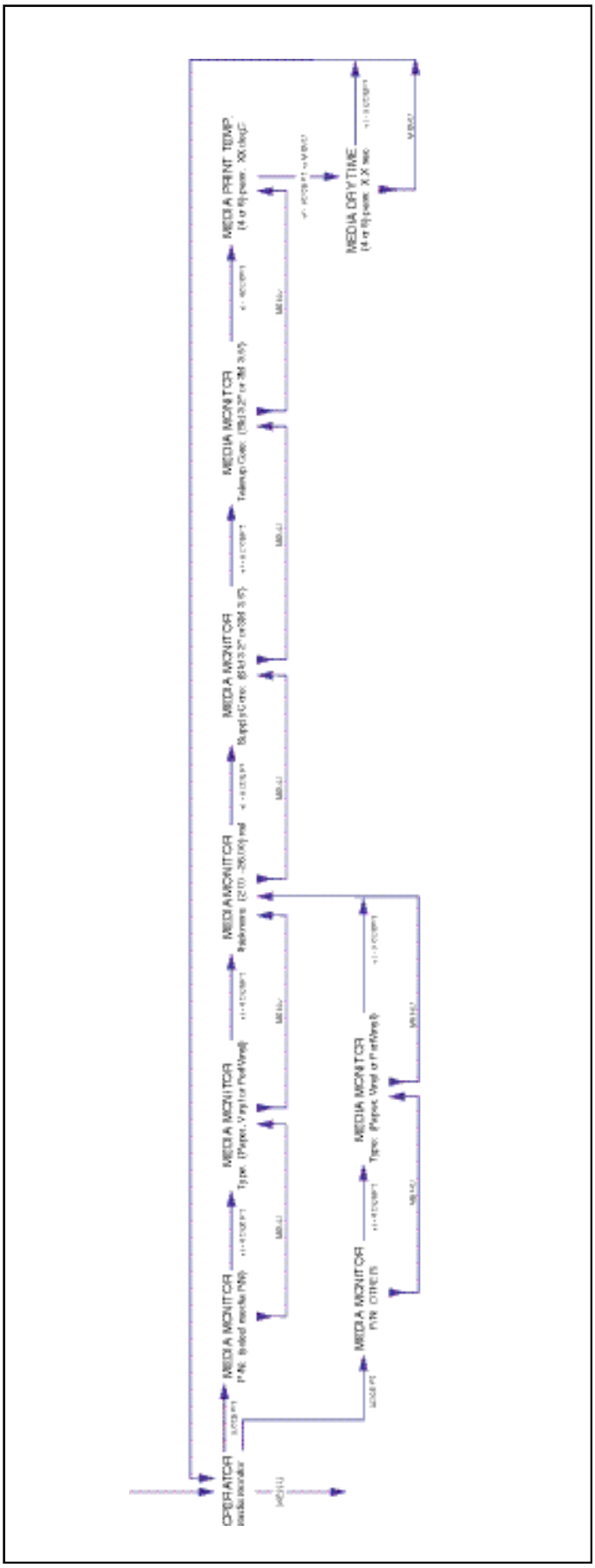


Figure 3-16 Media Monitor Menu

About Printer Menu

The About Printer menu (***Figure 3-17***) allows you to view the current printer specifications in the printer control panel. Retain this menu's information before calling for service. The About Printer menu is part of the Operator submenu.

Viewing Your Printer's Status

Follow these steps to view the About Printer menu.

1. Press the MENU button two times at
   Media: xxx' Used: yyy'

2. Press the ACCEPT button at
   MAIN MENU
   operator

   You will then see
   OPERATOR
   print parameters

3. Press MENU four times to go to
   OPERATOR
   about printer

4. Press ACCEPT to view
   ABOUT PRINTER
   ARIZONA

5. Press ACCEPT or MENU to view
   ABOUT PRINTER
   Printed: XXXXX'

6. Press ACCEPT or MENU to view
   ABOUT PRINTER
   FW Rev.: XX.X

7. Press ACCEPT or MENU to view
   ABOUT PRINTER
   FW Date: XX / XX / XX

8. Press ACCEPT or MENU to view
   ABOUT PRINTER
   Serial No.: XXXXXX

9. Press ACCEPT or MENU to view
   ABOUT PRINTER
   Boot rom: X.XX

10. Press ONLINE to go to the Main Menu.

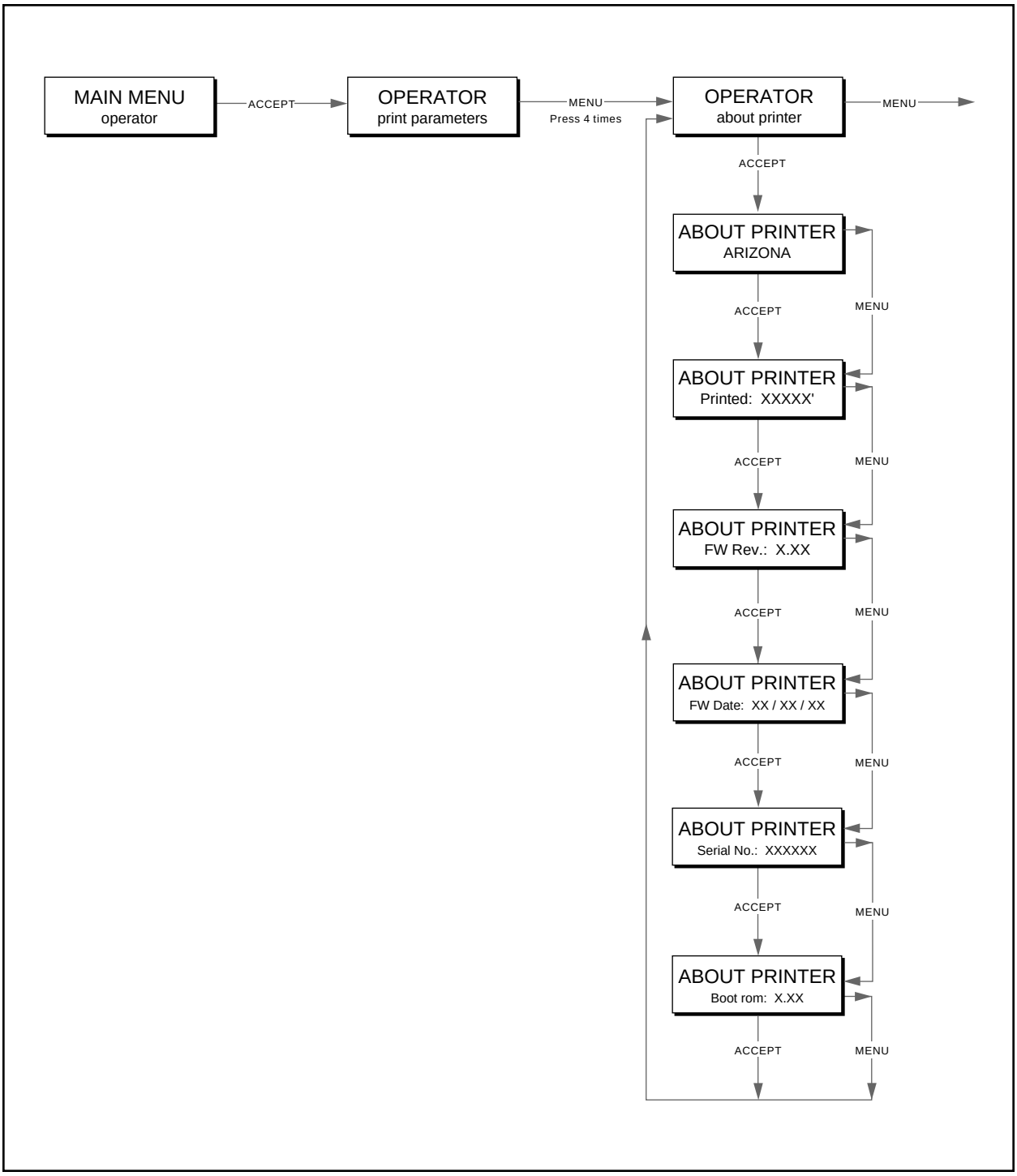


Figure 3-17 About Printer Menu

Units Menu

The Units menu (***Figure 3-18***) lets you choose between English and Metric units in the control panel. The Units menu is part of the Operator submenu.

Setting the Units

Follow these steps to set the type of Units used in the control panel:

1. Press the MENU button two times at
   Media: xxx' Used: yyy'

2. Press the ACCEPT button at
   MAIN MENU
   operator

You will then see
   OPERATOR
   print parameters

3. Press MENU five times to go to
   OPERATOR
   units

4. Press ACCEPT to go to
   UNITS
   english (or metric)

5. Use the +/– buttons to select a unit type(english or metric), then press ACCEPT to return to
   OPERATOR
   units

6. Press MENU to go to the Main Menu.

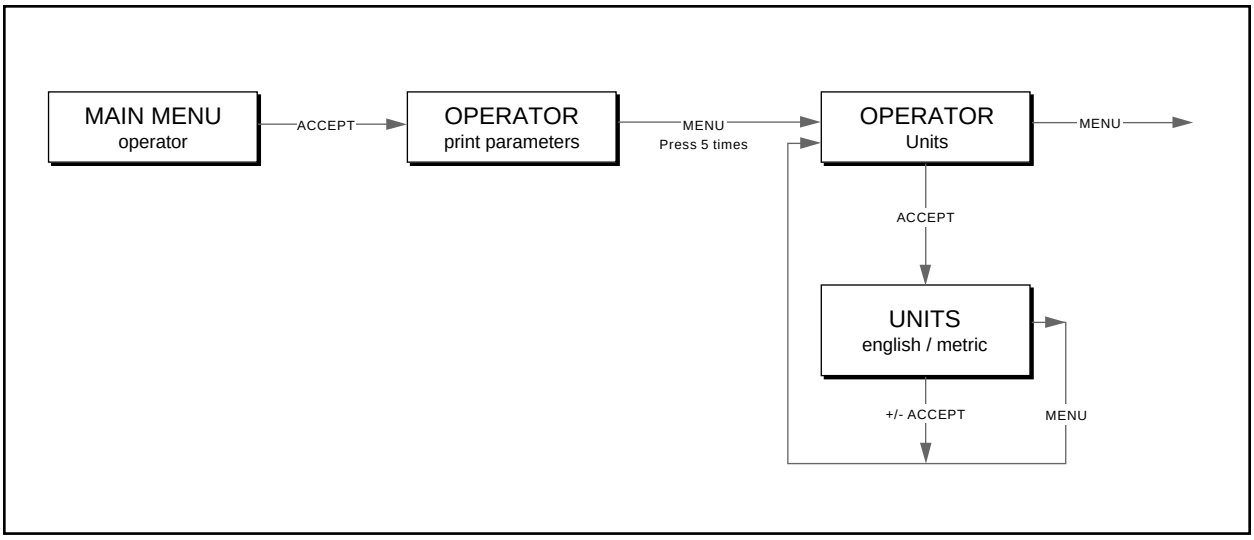


Figure 3-18 Units Menu

Set Clock Menu

The Set Clock menu (***Figure 3-19***) lets you set the date and time. When the date and time are set, the statistics print the date and time. The date and time should also be set for Ethernet compatibility. All Raster Graphics printer products are Year 2000 (Y2K) compliant. For more information on Y2K issues, visit out web site at http://www.rgi.com/ or call Customer Service toll free at 1-800-764-0999. The Set Clock menu is part of the Operator submenu.

Setting the Date and Time

Follow these steps to set the Date and Time:

1. Press the MENU button two times at
   Media: xxx' Used: yyy'

2. Press the ACCEPT button at
   MAIN MENU
   operator

   You will then see
   OPERATOR
   print parameters

3. Press MENU six times to go to
   OPERATOR
   set clock

4. Press ACCEPT to go to
   SET CLOCK
   set date

5. Press ACCEPT to go to
   SET DATE
   01 JAN 1999 FRI

6. Use the +/– buttons to enter each element: the date, the month, the year, and the day of week.

7. Press ACCEPT or MENU to return to
   SET CLOCK
   set date

8. Press MENU to go to
   SET CLOCK
   set time

9. Press ACCEPT to go to
   SET TIME
   hh : mm

10. Use the +/– buttons to enter the correct hour and minute, in 24-hour format.

11. Press ACCEPT or MENU to return to
    SET CLOCK
    set time

12. Press MENU to go to
    OPERATOR
    set clock

13. Press MENU to go to the Main Menu.

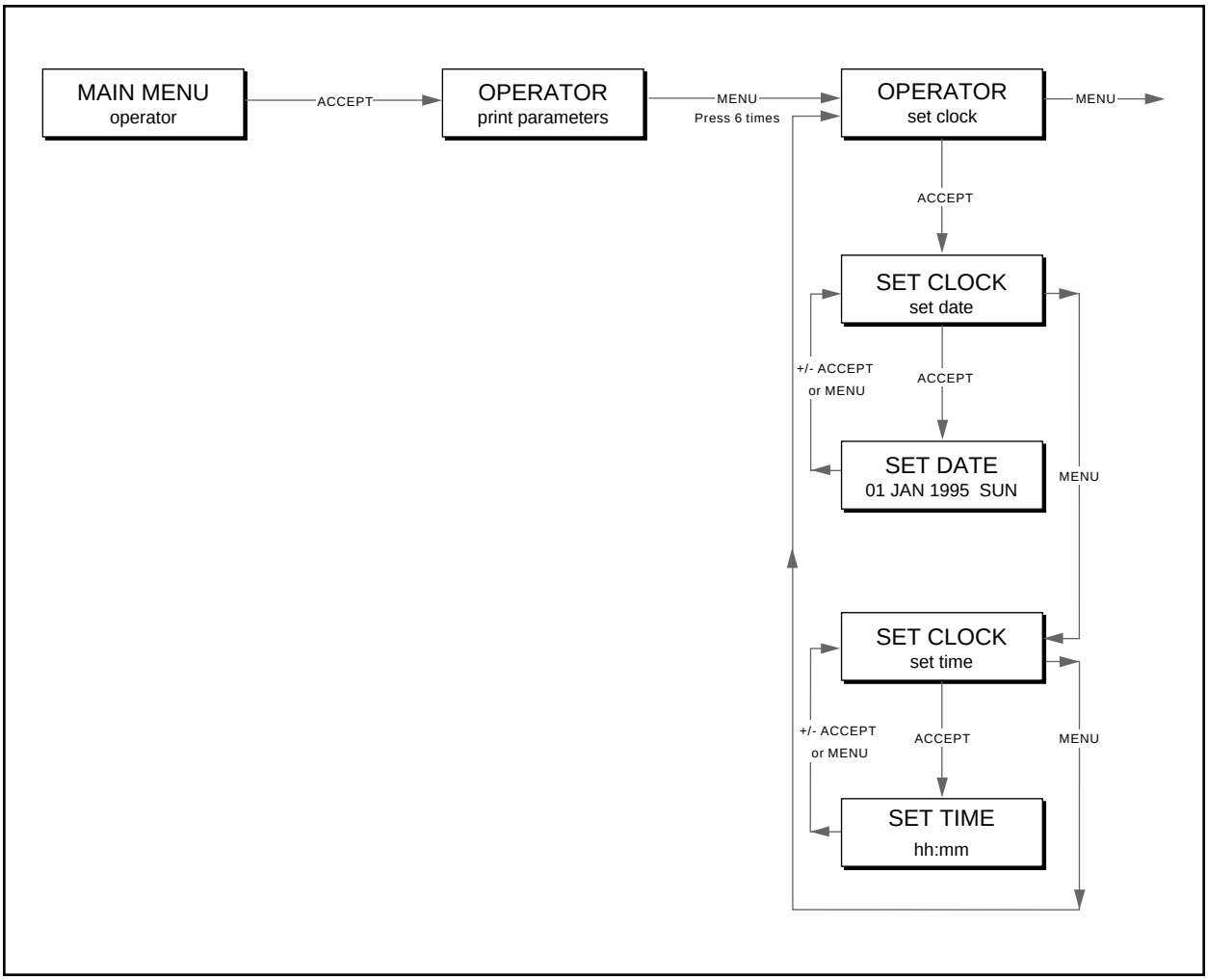


Figure 3-19 Set Clock Menu

Chapter 4: Operator Maintenance

Routine Maintenance Schedule

The Arizona DSP requires constant user maintenance and it's important to schedule periodic cleaning. A few minutes spent cleaning ensures the highest quality prints. Several areas need maintenance to ensure the highest print quality, and the printer design gives you easy access to all these areas. Maintenance is quick and simple. Diligent application of this routine will ensure optimum performance from your printer and follow the Routine Maintenance Schedule (***Table 4-1***) list and/or the procedures provided at the back of the User's Guide.

How Often Should You Do Maintenance?

Each user is different, with different types of print jobs, environmental conditions, duty cycles, and volume of work. While we furnish guidelines for periodic maintenance, the optimum maintenance schedule will evolve from observation of the Arizona DSP over a period of use. It may be, for example, that you should perform some specific maintenance each time you install a new roll of media. The type of print job also determines the maintenance schedule–if the printer produces a high volume of solid fill prints, it will need more tending than if it prints low-coverage drawings.

Who Should Do Maintenance?

If your site already has a technician in charge of printer maintenance, this person is the optimal candidate. While routine maintenance may be performed by any user, the best maintenance results from familiarity with the printer's internal operation and history.

Important: Use the proper protective gloves and only a lint-free cloth saturated with Isopropyl Alcohol when cleaning surfaces on the Arizona DSP (i.e. sheet metal frame, clear plexiglas window, ink bottle tray, encoder strip, vacuum platen and maintenance cloth station).

Only use 3M™ Scotchcal™ Thinner CGS-80 where Specified in the Printer Maintenance Procedures (i.e. Arizona DSP Print Head Maintenance Procedure) located at the back of this User's Guide.

Safety Information

Changing Quartz Heating Element

Wear white Cotton gloves provided with the Drying Lamp when handling element. Handling the element without the proper gloves will shorten the element life.

Routine Maintenance Schedule

A Routine Maintenance Schedule is shown as ***Figure 4-1***, and is also posted on the inside door of the printer. Diligent application of this routine will ensure optimum performance from your printer.

Handling Inks

The Arizona DSP uses solvent-based inks; the liquid and the fumes are combustible. The inks may cause eye irritation; and skin irritation upon prolonged or repeated contact; may be absorbed through the skin; and may cause respiratory system irritation and nervous system impairment. Read and practice safety guidelines as outlined in the Material Safety Data Sheet (MSDS) for each ink, and post the document in the work area as required by prevailing law. An excerpt of the MSDS follows.

Personal Safety
The operator should wear butyl rubber gloves, a protective apron, an NIOSH-approved respirator (half-mask organic vapor respirator), and Safety glasses with side shields when handling inks.

What to do with Ink Spills on Surfaces
Observe precautions as noted above. Ventilate area. Contain spill. Cover with absorbent material. Collect spilled material. Clean up residue with water. Place in a closed container. Do not release to waterways or sewer. Incinerate in a permitted hazardous waste incinerator.

What to do with Ink Spills on Persons
Eye contact: immediately flush eyes with large amounts of water. Get immediate medical attention.

Skin contact: flush skin with large amounts of water. If irritation persists, get medical attention.

Inhalation: remove person to fresh air. If not breathing, get immediate medical attention and give artificial respiration. If breathing is difficult, get immediate medical attention.

If swallowed: call a physician immediately. Only induce vomiting at the instructions of a physician. Never give anything by mouth to an unconscious person.

ROUTINE MAINTENANCE SCHEDULE

RASTERGRAPHICS

DESCRIPTION	PROCEDURE	FREQUENCY
Drive Roller	Wipe clean with lint-free cloth and alcohol*.	After Every Media Change
Maintenance Cloth Station	Clean and change Blotting Cloth as instructed by the Control Panel.	See Control Panel Message
Encoder Strip	Gently wipe clean with lint-free cloth and alcohol (don't bend).	As Needed
Ink Waste Bottle	Install/Remove Ink Waste Bottle as instructed by Control Panel.	See Control Panel Message
Capping Station	Wipe clean with lint-free cloth and alcohol**.	Daily
Media	Install/Remove Media Supply and Take-up from Drive Hubs.	As Needed
Ink System	Install/Remove Ink Bottles as instructed by the Control Panel.	See Control Panel Message
Interior / Exterior	Wipe clean printer surfaces with lint-free cloth and alcohol.	As Needed
Vacuum Platen & Covers	Wipe clean with lint-free cloth and alcohol.	After Every Media Change
Piezo Print Heads	Use Operator Menu on Control Panel to Purge Piezo Print Heads.	When Needed
Carriage Front Surface Plate & Print Heads	Access Carriage and manually push it to the Blotting Station and release. Wipe the front surface plate clean**. Clean Print Heads with CGS-80 only and Lint-free Swabs, see maintenance procedure for details.	Daily
Absorbing Pads	Change Capping Station and/or Maintenance Station when soaked.	As Needed

***Always use gloves and a lint-free cloth saturated with Isopropyl Alcohol (a solution of 70% Isopropyl Alcohol and 30% deionized water works best).**

****If Isopropyl Alcohol doesn't remove ink stains, use only 3M™ Scotchcal Thinner CGS-80. Always use gloves and a lint-free cloth.**

While Raster Graphics furnishes guidelines for periodic maintenance, the optimum maintenance schedule will evolve from observation of the Arizona DSP over a period of use. It may be, for example, that you should perform some specific maintenance each time you install a new roll of media. The type of print job also determines the maintenance schedule - if the Arizona DSP produces a high volume of solid fill prints, it will need more tending than if it prints low-coverage drawings. Raster Graphics requires that the operator must follow minimum cleaning guidelines as described in the User's Guide. A few minutes spent cleaning ensures the highest quality prints. Use the maintenance procedures, provided as a separate sheets at the back of this User's Guide, as a long term guide for keeping track of the printer features. Also see Chapter 4, Operator Maintenance for an idea as when to expect adjustments or regular service to the printer during production runs. Use the table above as a guide for required printer maintenance.

Table 4-1 Routine Maintenance Schedule

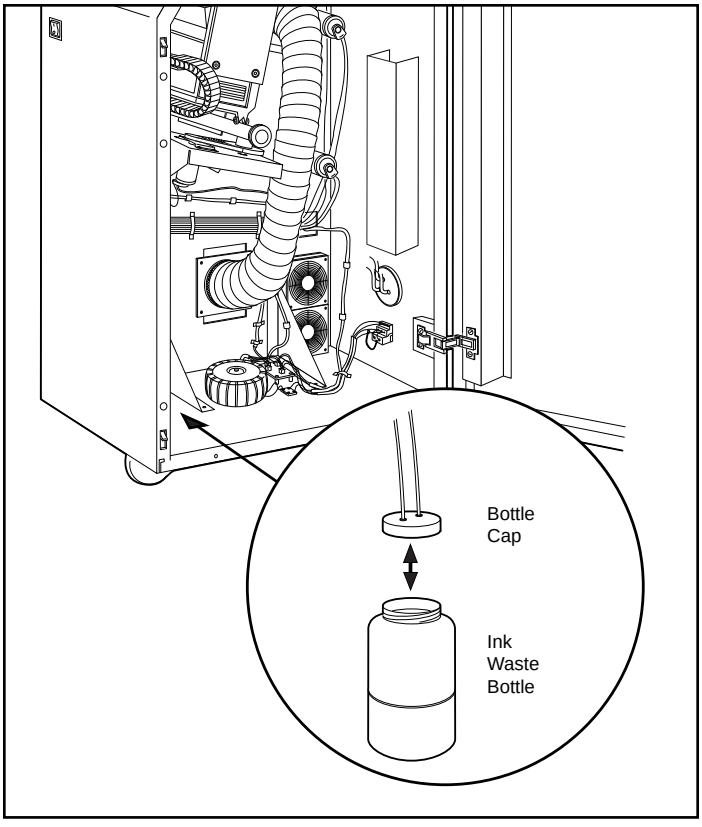


Figure 4-1 Installing/Replacing Ink Waste Bottle

Installing/Replacing the Ink Waste Bottle

The Ink Waste Bottle receives excess ink from manual purges and while the nozzles are stationary on the Capping Station for long periods of time. The printer firmware keeps track of the waste bottle ink level in milliliters (ml). When the waste bottle reaches capacity, an error message is displayed on the control panel instructing the operator to replace it. To order more ink waste bottles, see Ordering Printer Supplies on page *vii*. Follow the steps below to replace the ink waste bottle when asked to do so by the control panel:

1. Go to
   OPERATOR
   maintenance

2. Press the ACCEPT button and you will then see
   MAINTENANCE
   purge nozzle

3. Press the MENU button four times to view
   SERVICE FUNCTIONS
   replace waste bottle

4. Press the ACCEPT button to go to
   REPLACE WASTE BOTTLE
   XXX.XX ml Accept?

Before pressing ACCEPT, replace the ink waste bottle in the right equipment bay. Use protective gloves when removing the cap and installing a new bottle. Once the fresh waste bottle is installed, press ACCEPT to clear (zero out) the waste bottle counter and to return to the Service Functions menu.

Capping Station

The Capping Station protects the print heads while parked and prevents ink from drying in the nozzles. During purge and primes, it provides a seal so that the waste bottle pump and air pressure pumps will suck out any dried ink solids and clear the nozzles for optimum print quality and head performance. Improper or lack of cleaning can leave ink solids on the surface of the heads causing nozzle dropout and streaking due to deflection.

Follow these steps to clean the Capping Station of ink residue and other foreign objects or the Print Head Maintenance Procedure at the back of this manual:

1. Access the Capping Station through the control panel by pressing the MENU button three times at
   MAINTENANCE
   purge nozzle

2. Press the ACCEPT button at
   MAINTENANCE
   access carriage

You will then see
   ACCESS CARRIAGE
   'ACCEPT' to start

3. Press the ACCEPT button. The carriage assembly begins moving over the media or Vacuum Platen as shown in ***Figure 4-2***, Revealing the Capping Station, and the next menu, PARK CARRIAGE, appears on the control panel LCD. See ***Figure 3-8***, Maintenance Menu, for a menu tree to help you through these steps.

Note: Always access the Capping Station and carriage assembly through the printer control panel before cleaning or replacing Absorbing Pads.

4. Put on protective gloves and use a lint-free cloth saturated with isopropyl alcohol to wipe away the Capping Station seal surface as indicated in ***Figures 4-3***, Cleaning the Capping Station. Do not insert any object into the nozzle.

5. Clean the station thoroughly and clean in the seal grooves with corner of cloth.

6. Close all covers and doors and press the ACCEPT button twice to park the carriage. The Vacuum Platen begins to suck air and the carriage moves toward the Capping Station. Run and evaluate the Nozzle Print for nozzle drop-out or mis-direction, repeat steps above until all nozzles are firing.

Replacing the Absorbing Pad

To order more Absorbing Pads, see Ordering Printer Supplies on page *vii*. Follow these steps when replacing the Capping Station Absorbing Pad:

1. Access the carriage assembly through the control panel to reveal the Capping Station.

2. Check the Absorbing Pad in the catch tray for ink saturation. If the Absorbing Pad is significantly soaked with ink, it is time to replace it with a new one.

3. Put protective gloves on and lift one corner of the pad and gently pull it out and replace with an extra pad as shown in ***Figure 4-4***, Replacing the Absorbing Pad. Be careful not to squeeze or rub the Absorbing Pad near other printer components.

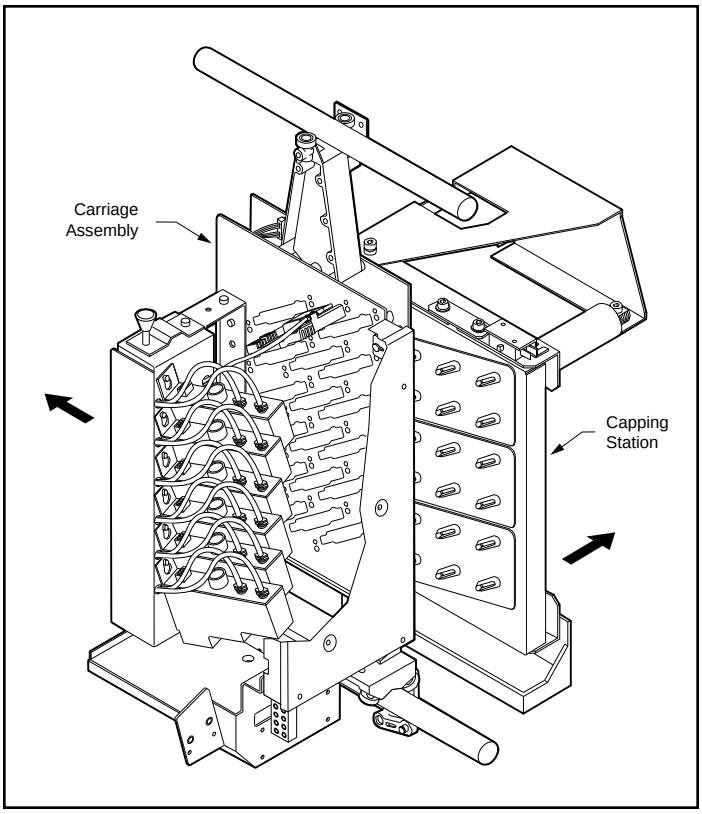


Figure 4-2 Revealing the Capping Station

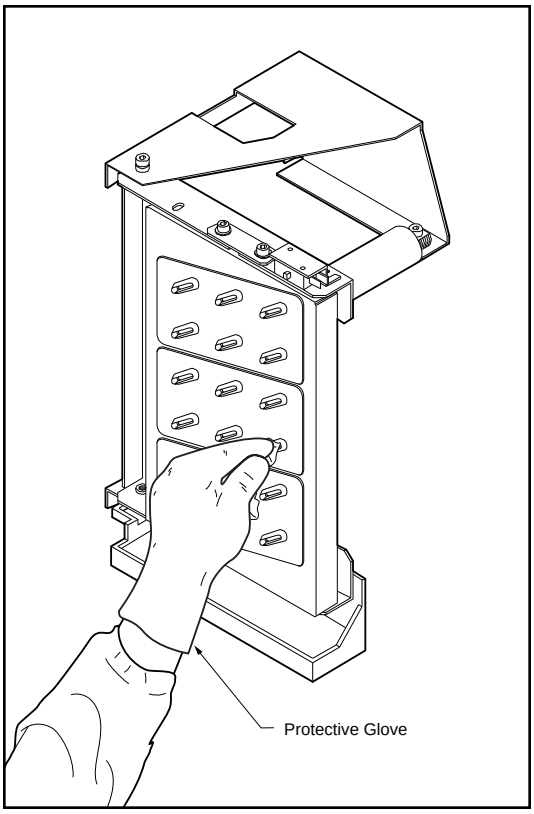


Figure 4-3 Cleaning the Capping Station

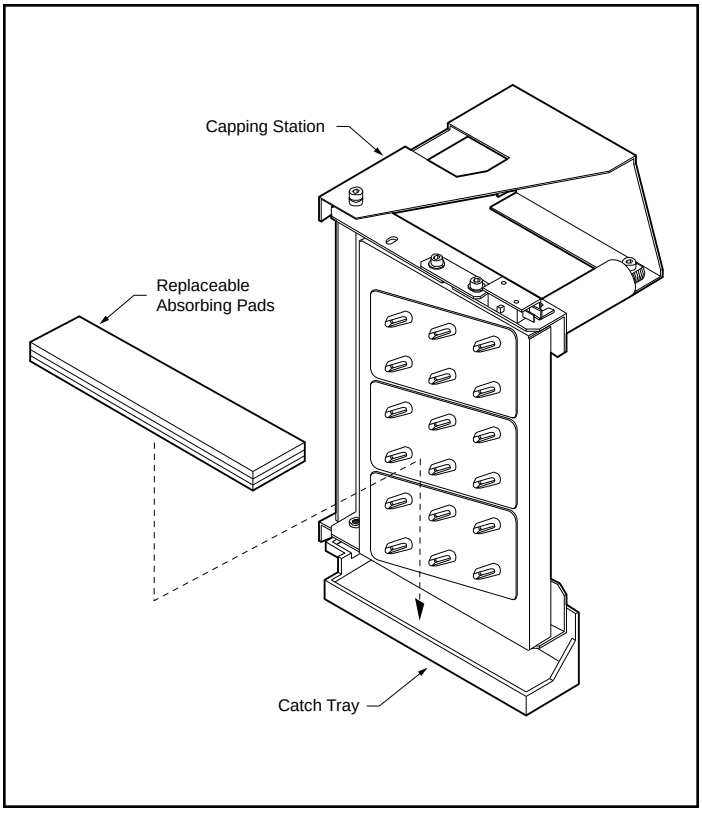


Figure 4-4 Replacing the Absorbing Pad

Installing/Replacing Print Heads

Removing or replacing a print head should not normally be done by the operator, but under certain conditions or circumstances in the event of malfunctioning nozzles, unsatisfactory print quality or print head failure when authorized by RGI Customer Service. It is necessary to replace the print head if the problem cannot be solved after several purges and test print evaluations. Send your print samples to RGI, attention Customer Service, immediately upon determining unsatisfactory print quality and/or print head failure for evaluation.

RGI Customer Service will then provide appropriate actions to solve your printing problems. Use the Operator/maintenance menu and the Operator/test prints menu on the control panel to purge the print heads and print the nozzle print respectively to reestablish nozzle firing. Follow the steps below to correctly remove or replace the print heads:

1. Access the Carriage Assembly through the control panel (see Chapter 3, Maintenance Menu). The carriage assembly should move over the media or Vacuum Platen shown in ***Figure 4-5***, Moving the Carriage. Refer to ***Figure 4-6***, Carriage Assembly, for a description of the Carriage Assembly parts.

Note: Put protective gloves on when working with these inks. Use the Access Carriage menu on the control panel before accessing print heads or Absorbing Pads.

2. Lift the front cover and locate the Juice Box release pin. Lift pin and swing Juice Boxes away to access print heads, ink tubes and/or Absorbing Pads on carriage as shown in ***Figure 4-7***, Moving the Juice Boxes. Make sure a replacement print head carriage is within arms reach before detaching ribbon cable and ink tube.

3. Power off the printer. Locate desired print head and pull its ribbon cable out gently not to damage pins as shown in ***Figure 4-8***, Ribbon Cable Removal.

4. Twist and pull ink tube out and continue holding the tube in a slightly elevated position as shown in ***Figure 4-9***, Ink Tube Removal.

5. Remove print head carriage from head plate and replace with an entire new one as shown in ***Figure 4-10***, Removing the Print Head Carriage. Save Absorbing Pads whenever possible and store them for later use.

6. Reassemble the carriage and lock the Juice Boxes back into place. There is a sensor that disables the carriage assembly from moving back to the Capping Station if these juice boxes are not fully locked into place.

7. Power on the printer. Park the carriage assembly through the operator maintenance menu on the control panel to return it back to the Capping Station.

8. Purge print heads sufficiently to get them to work.

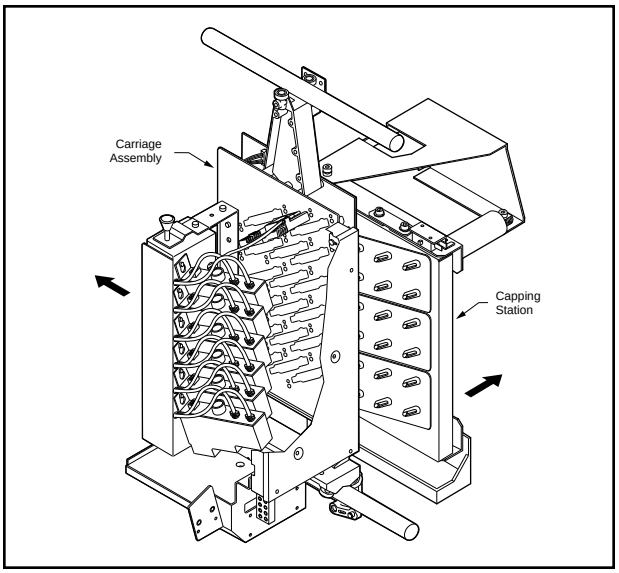


Figure 4-5 Moving the Carriage

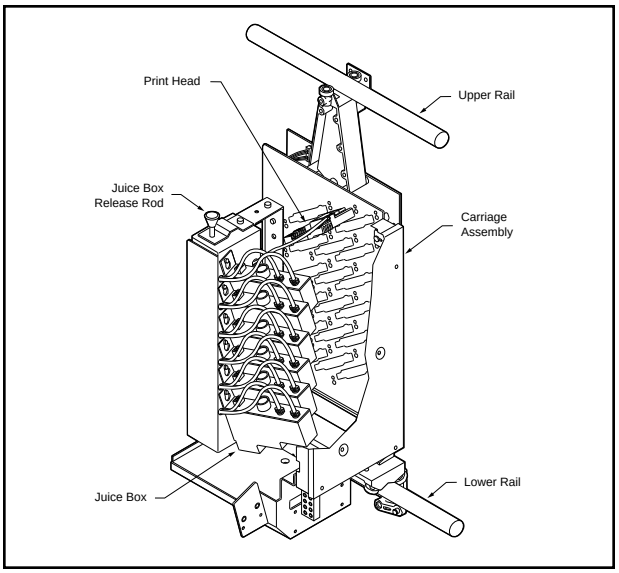


Figure 4-6 Carriage Assembly

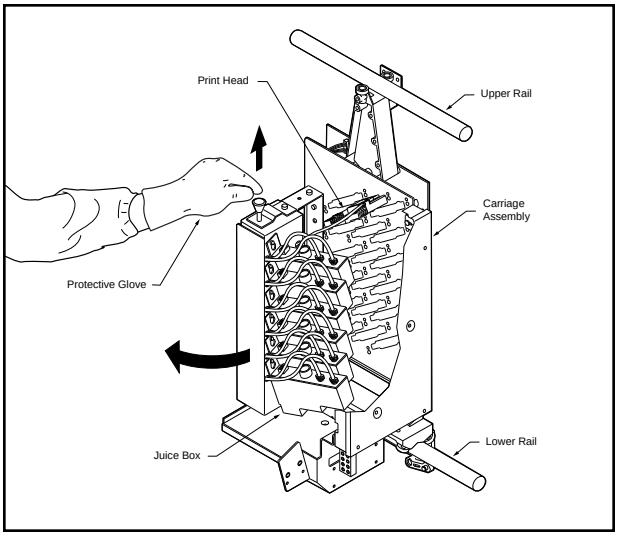


Figure 4-7 Moving the Juice Boxes

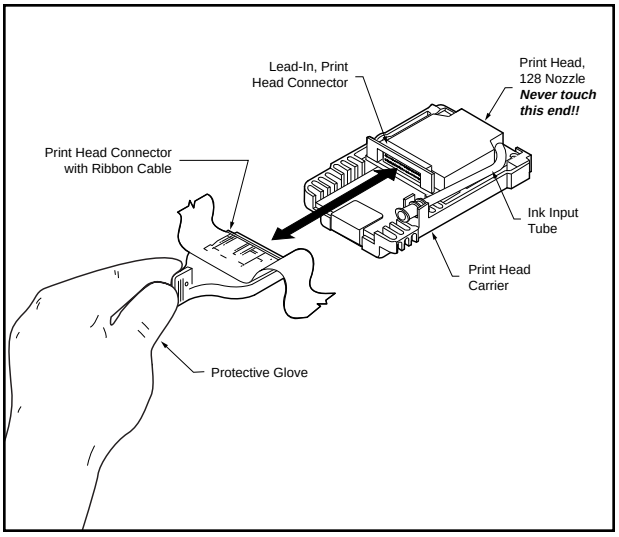


Figure 4-8 Ribbon Cable Removal

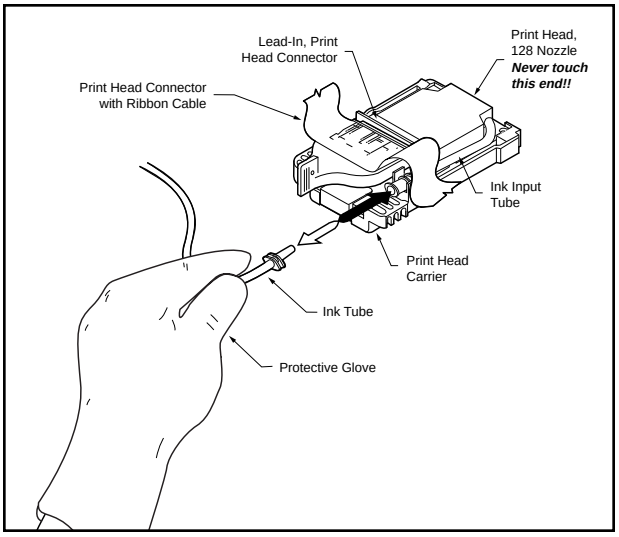


Figure 4-9 Ink Tube Removal

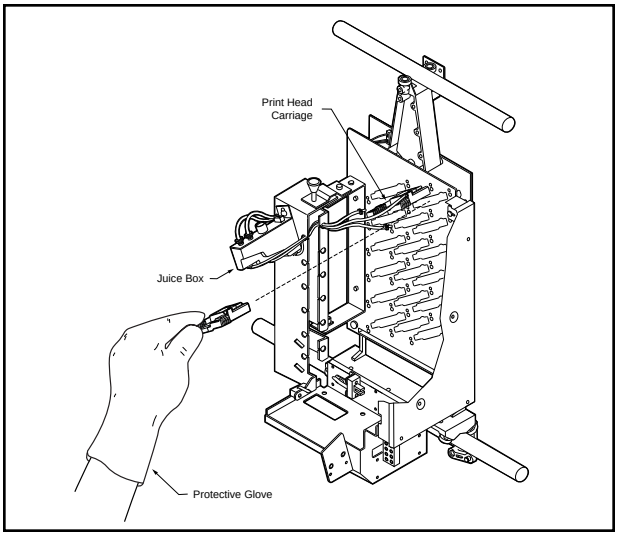


Figure 4-10 Removing the Print Head Carriage

Replacing the Absorbing Pads

1. Access the Capping Station through the control panel. The carriage assembly should move over the media or Vacuum Platen shown in ***Figure 4-5***, Moving the Carriage. Refer to ***Figure 4-6***, Carriage Assembly, for a description of the Carriage Assembly parts.

2. Locate Juice Box release pin. Lift pin and swing Juice Boxes away to access both Absorbing Pads on head plate as shown in ***Figure 4-7***, Moving the Juice Boxes.

3. Check the large Absorbing Pads on carriage below the print heads for ink saturation. If either Absorbing Pads are significantly soaked with ink, it is time to replace them with new ones.

4. Choose the Absorbing Pad to be removed. Put protective gloves on and lift one corner of the pad or pull tabs to gently remove it and replace with an extra pad as shown in ***Figure 4-11***, Replacing Carriage Absorbing Pads. Be careful not to squeeze or rub the Absorbing Pad near other printer components.

5. Check all print head carriage Absorbing Pads for ink saturation and determine if they require replacement as shown in ***Figure 4-12***, Replacing Print Head Absorbing Pad.

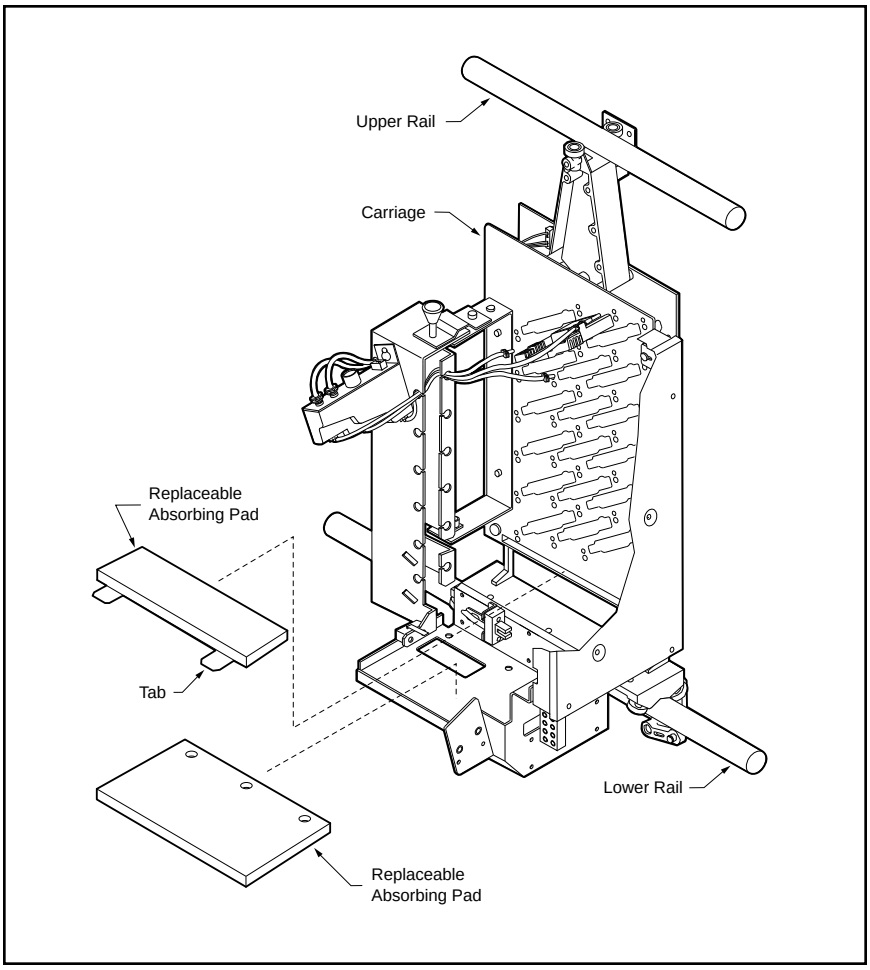


Figure 4-11 Replacing Carriage Absorbing Pads

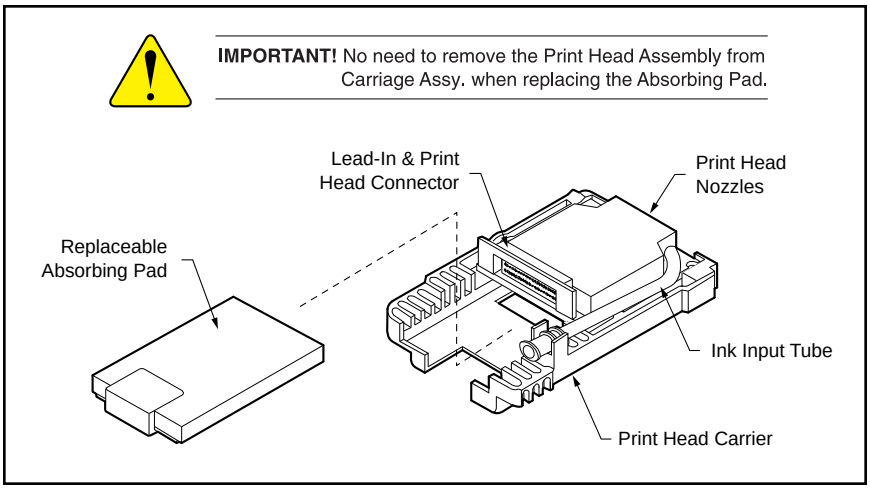


Figure 4-12 Replacing Print Head Absorbing Pad

Drive Roller

The Arizona DSP uses a Drive Roller to move the media over the Vacuum Platen and onto the Take-up Core. It provides a smooth, continuous surface for the media and ensures that the media comes into contact with the Vacuum Platen evenly.

Wipe down the Drive Roller with only isopropyl alcohol saturated lint-free wipe after every media change. Cleaning the Drive Roller keeps the printer operating at its optimum. Follow the steps below to clean the Drive Roller:

1. Disengage the Pinch Rollers from the Drive Roller and media. Cut and remove media away from the Drive Roller in preparation for cleaning.

2. Use only an isopropyl alcohol saturated lint-free wipe included with the printer to rub down the Drive Roll cylinder.

3. Advance media using the control panel to rotate the Drive Roller in order to reach entire diameter for wiping as shown in ***Figure 4-13***, Cleaning the Drive Roller.

Vacuum Platen

The Vacuum Platen supports the paper by sucking the air out from behind it. This allows the paper to sit evenly along the width of the printable area. It is necessary to periodically clean the Vacuum Platen to ensure proper paper alignment and paper flatness.

There are two magnetic Vacuum Platen covers included with the printer to cover the exposed area when media width is less than 40 inches.

Note: Be sure that all the edges of the magnetic covers are flat and not curled up, which could cause damage to the nozzles.

Follow the steps below to clean the Vacuum Platen and magnetic Vacuum Platen covers:

1. Remove the supply media.

2. Use an isopropyl alcohol saturated lint-free cloth to rub the Vacuum Platen and magnetic Vacuum Platen covers clean as shown in ***Figure 4-14***, Cleaning the Vacuum Platen.

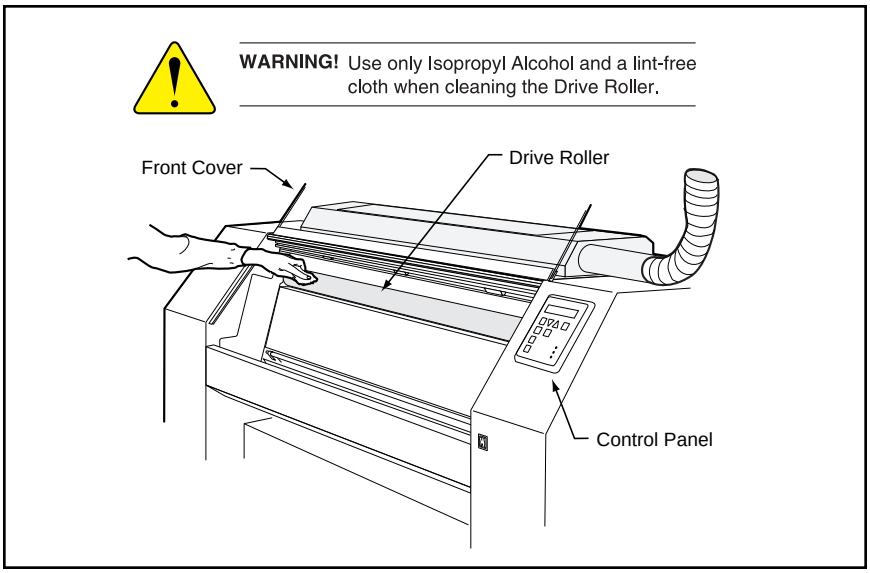

WARNING! Use only Isopropyl Alcohol and a lint-free cloth when cleaning the Drive Roller.
Front Cover
Drive Roller
Control Panel

Figure 4-13 Cleaning the Drive Roller

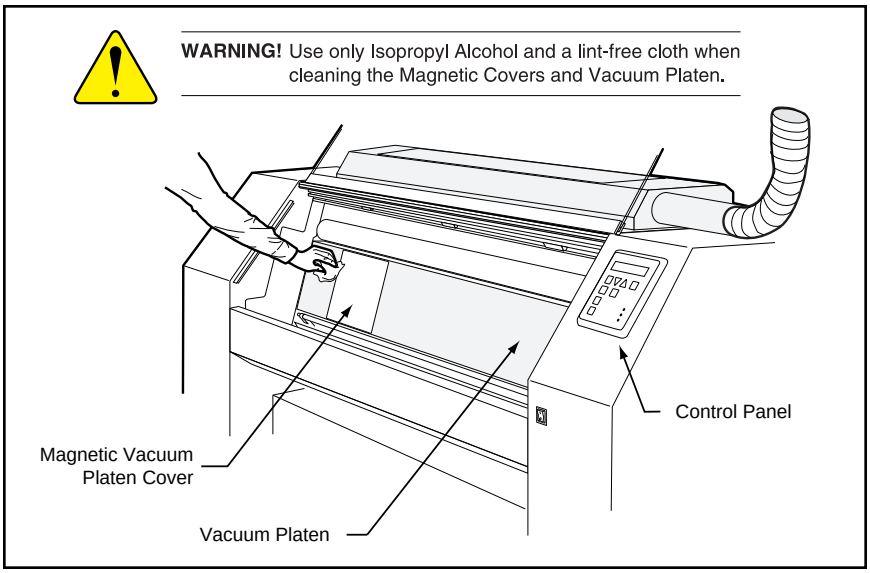

WARNING! Use only Isopropyl Alcohol and a lint-free cloth when cleaning the Magnetic Covers and Vacuum Platen.
Control Panel
Magnetic Vacuum Platen Cover
Vacuum Platen

Figure 4-14 Cleaning the Vacuum Platen

Frame Interior/Exterior

The Arizona DSP interior and exterior should kept clean to minimize particulate matter congestion in its components. The printer frame is mostly made of sheet metal and some clear plastic. Using protective gloves, wipe down the entire body of the printer with one or more isopropyl alcohol saturated lint-free cloths to remove dust buildup, fingerprints oil and ink stains.

Do not use 3M Scotchcal Thinner CGS-80 on any plastic parts located anywhere on the printer (i.e. front plexiglas window). This type of thinner will dissolve the plastic. Interior and exterior cleaning keeps the printer operation and look at its optimum.

Where to Clean

Always use a lint-free cloth saturated with isopropyl alcohol when cleaning the surfaces of this printer. Open all covers to the printer and inspect for noticeable spots that could be cleaned with the isopropyl alcohol lint-free cloth as indicated in ***Figure 4-15***, Interior Cleaning and ***Figure 4-16***, Exterior Cleaning. Clean anywhere you see ink, paper dust, or any other contaminant, and proceed with daily operations.

When to Clean

The best time to clean the printer is before installing a new roll of media. With the power turned off and the front, rear, and side access doors of the printer open, inspect for residue. Wipe away ink, paper dust, or any other contaminant, and proceed with the media installation.

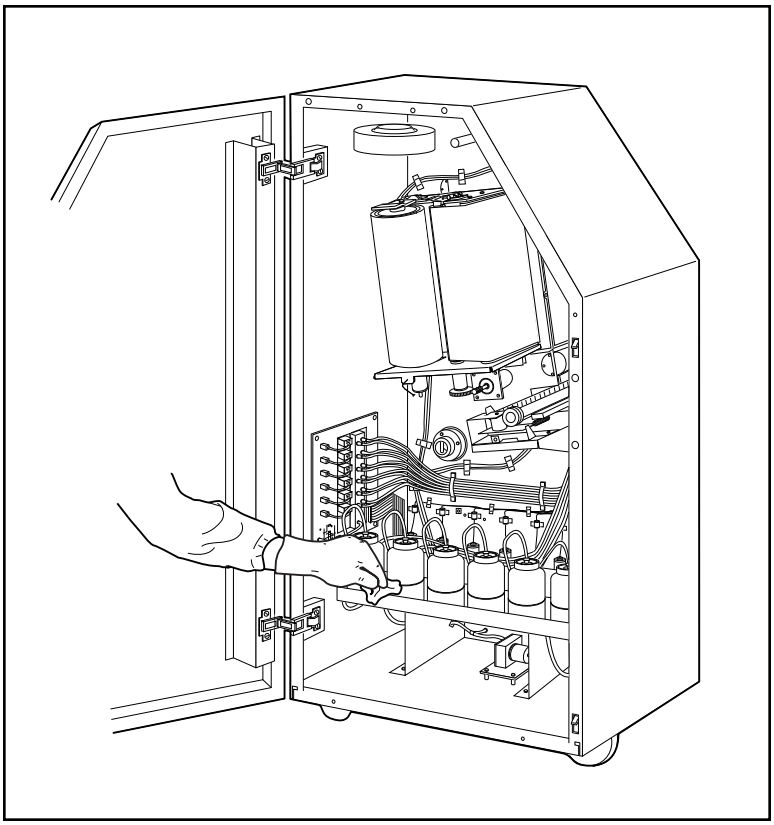


Figure 4-15 Interior Cleaning

Figure 4-16 Exterior Cleaning

Chapter 5: Maintaining Print Quality

Choosing the Proper Printing Mode

The Arizona DSP control panel enables the operator to setup the proper printing mode once a type of media has been selected and an image stored. There are specific values that need to be entered in the print parameters menu if you are not printing from the software application.

Under the Print Parameters menu, the operator can change margins, statistics, overlap, print speed and write direction for the printer. Be aware that when attempting to print faster than recommended, inadequate ink curing or drying may occur. The printer recommended settings for each of the Raster Graphics approved media types are provided below and the control panel menu for changing these settings is shown in ***Figure 5-1*** Print Mode Settings.

Mode Settings for Media and Ink Types

Below is the standard mode setting specification for input under the OPERATOR/print mode menu and/or host software for printing up to 180 square feet per hour on the Arizona DSP:

PRINT MODE / overlap: (4-pass or 8-pass)
RECOMMEND 8-PASS ONLY

PRINT MODE / speed: (1x or 2x)
RECOMMEND 2X SPEED ONLY

PRINT MODE / write dir.: (unidir or bidir)
RECOMMEND BI-DIRECTIONAL WRITE DIR. ONLY

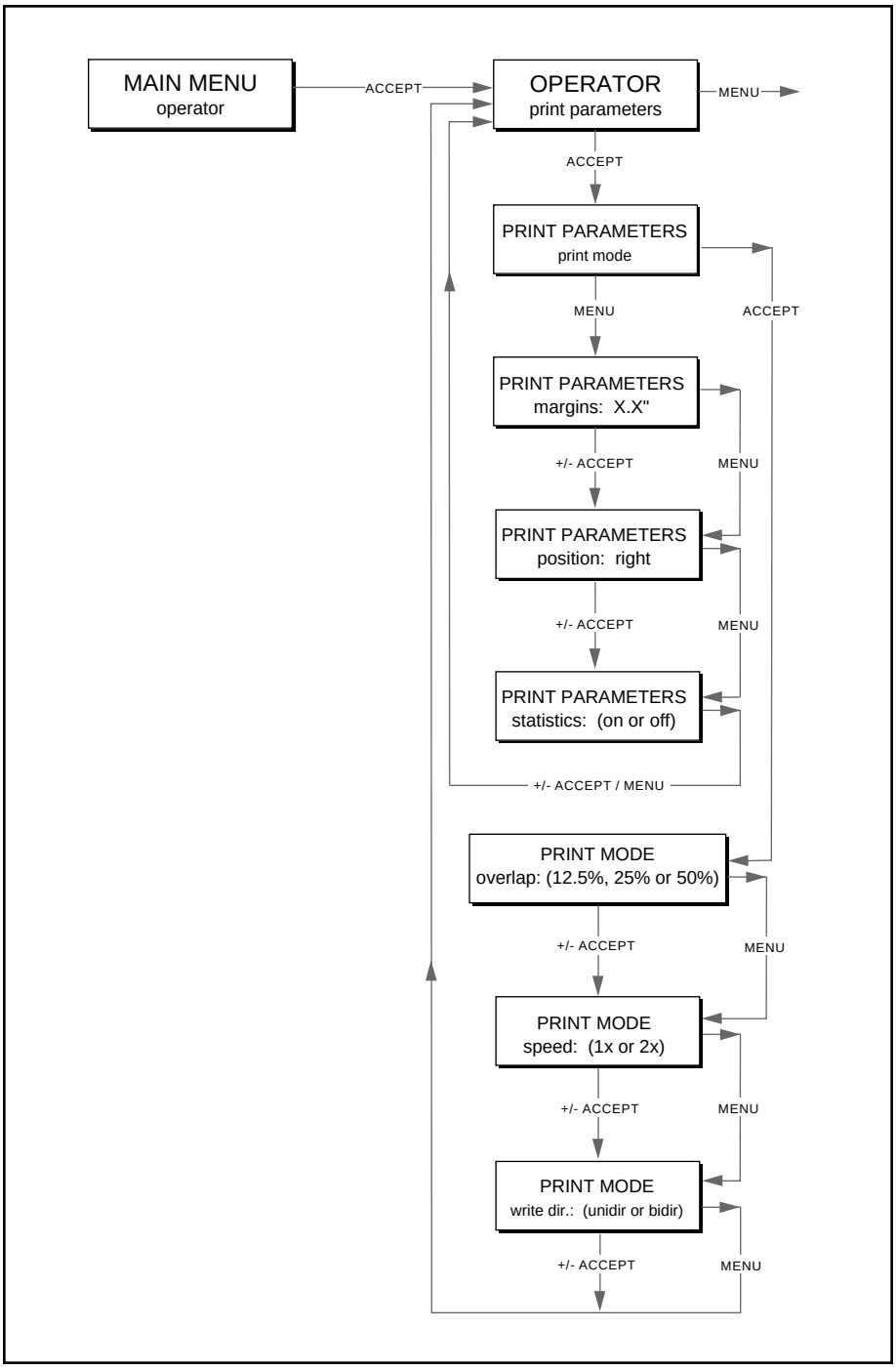


Figure 5-1 Print Mode Settings

Horizontal Line Dropout

If streaking or faded lines appear on the print, a print head or heads could possibly be the cause. There are a number of steps you can take to eliminate visual errors to prints. If these defects cannot be resolved by the operator, then contact Raster Graphics customer Customer Service Department at 1-(800)-764-0999.

Line Dropout Description

Dropout, broken lines, or weak images are most likely caused by debris on the print heads or media. A single missing line that runs through all prints indicates a dirty location on the print heads. ***Figure 5-2***, Horizontal Line Dropout, gives an example of missing lines on the color bars.

1. Check or print the configuration print settings in the Operator/Test Prints Menu.

2. Purge the print heads as directed in the Operator Maintenance Menu.

3. Clean the Capping Station Seals and Print Heads as specified by the maintenance procedure at the back of this manual.

4. Reprint the solid color bars to evaluated the print heads. If nozzle dropout continues, use the PiezoRx utility mentioned in the next step and see the PosterShop manual for correct software setup.

5. **PosterShop PiezoRx Utility** - allows you to identify and disable incorrectly functioning nozzles (nibs) in the printer print heads. Doing so allows the printer to compensate for the misfunctioning nozzle so that the print quality is not significantly altered.

> ***Note***: You should try purging the print heads a number of times before using this utility.

If the solutions mentioned above don't solve the problem, contact Raster Graphics Customer Service for additional service.

Figure 5-2 Horizontal Line Dropout

Appendix A: Troubleshooting/Error Messages

Calling for Service (1-800-456-3473)

The Arizona DSP should provide reliable service. Always check these areas before calling for service:

1. Visually check the ink levels.

2. Turn printer off for one minute, then turn it back on.

3. Try printing one or more of the test prints. If you can print them, the problem may be with the host computer or the network, not the printer. If you can't print any of the test prints, note the error displayed on the control panel and check it against the list in this chapter.

4. If the media won't load, or has other problems related to installation, try another roll of media.

5. If the printers on/off switch doesn't apply power to the printer, check the fuses in the right equipment bay on the DIN Rail, the power cord, and the building power supply.

6. Did you just change media or ink in the printer? Run through the maintenance procedures again, checking for proper installation and open doors.

When to Place a Service Call

It's important to try to eliminate simple problems before calling your service representative, but it's also important to know when to call for service. Without proper training, servicing the printer yourself may cause further damage. Once you have determined that a service call is necessary, call as soon as possible. Have this information ready:

1. **Printer model and serial number**. This is located near the power input or through the operator panel if operable.

2. **The type of computer and operating system acting as print server**.

3. The **type of connection–Parallel, SCSI, or Ethernet** between the print server and the printer.

4. **Error message** displayed on the control panel, if any.

5. The **exact circumstances when the error occurred** - during loading of the media, printing, or maintenance.

6. **Note any unusual phenomena**–peculiar printing, noises, smells–associated with the failure.

7. **Note the media type and lot number**. For Raster Graphics media, the lot number is located on the box and on the inside tube of the roll.

User-correctable Errors

User-correctable Errors are problems that interfere with printing but do not shut down the printer completely. Always check the control panel whenever the printer stops or operation is not possible. The message display will give you a description of the error or problem. User-correctable error messages can be broken down into three different categories. The categories are:

- Print Error Messages
- Operational Error Messages
- Low Ink Status Messages

Since User-correctable Errors, in most cases, don't shut the printer down, the printer itself will tell you what's wrong by displaying an error message on the control panel. Check these common errors using the listed tables and apply the appropriate remedy. Power off the printer then back on again to continue normal operation when error messages are displayed and corrected.

Clearing Errors

Most of the errors can be cleared by turning the printer off and waiting 60 seconds before turning it on again. If the problem persists, do the following:

- Check the media path for obstructions.
- Check all data cables.
- If any part of the printer seems to need it, perform the cleaning and maintenance routines specified in the Operator Maintenance Menu.

Print Error Message

Print Error Messages occur when the printer is getting ready to print. The operator can access the menus to correct the problem or to cancel the print, see ***Table A-1***, Print Error Messages.

Operational Error Messages

Operational Error Messages are detected by the printer which require operator intervention. The operator must correct the error and press the ACCEPT key or in some cases ignore the error by pressing the CANCEL key. Not all operational error messages can be corrected by operator intervention. In some cases, a service representative will need to perform the correction. See ***Table A-2***, Operational Error Messages.

LCD MESSAGE	DESCRIPTION	SUB-SYSTEMS	RECOMMENDED ACTION
SYSTEM ERROR INSUFFICIENT MEDIA	Not enough media left for next print	Supplies	Load media with sufficient length
SYSTEM ERROR MEDIA TOO NARROW	The usable media width has changed since the time the print was first received	Supplies	Change margins or media
SYSTEM ERROR NO PAPER	There is no media loaded	Supplies	Load media
SYSTEM ERROR TAKE-UP ROLL FULL	Too much media on take-up roll	Supplies	Empty take-up
Add [color] ink then fill reservoir	Not enough ink to do next print	Supplies, reservoir sensor	Replace ink bottle and use menus to fill reservoir
	Ink level above upper limit		Operator must manually drain
			Check level settings-105 full/100 low
SYSTEM ERROR CHECK HEATER/FUSES	When temperature is less than 35 degC & there is no change in temperature for 30 seconds	Heater and/or Watlow Control System	Recycle power, check Heater, Blowers, fuses & the power cord connection
	When the temperature drops 5 degC during printing	Heater and/or Watlow Control System	Recycle power, check Heater, Blowers, fuses & the power cord connection
SYSTEM ERROR CHECK BLOWERS/FUSES	When the temperature increases 5 degC above print temperature	Heater and/or Watlow Control System	Recycle power, check Heater, Blowers, fuses & the power cord connection

Table A-1 Print Error Messages

PROBLEM(LCD MESSAGE)	POSSIBLE CAUSES	RECOMMENDED ACTIONS
Unlock Supply Dancer and press ACCEPT key	Supply dancer locked	Unlock supply dancer and press ACCEPT key
	Defective supply dancer	Contact RGI Customer Service
	Defective or misaligned supply sensor	Contact RGI Customer Service
Unlock Takeup Dancer and press ACCEPT key	Supply dancer locked	Unlock supply dancer and press ACCEPT key
	Defective supply dancer	Contact RGI Customer Service
	Defective or misaligned supply sensor	Contact RGI Customer Service
Close Reservoir Door and press ACCEPT key	Deficient reservoir sensor	Contact RGI Customer Service
	Defective Carriage Board	Contact RGI Customer Service
	Defective or pinched Carriage Board cables	Contact RGI Customer Service
	Reservoir sensor did not read flag	Contact RGI Customer Service
Latch Maint. Station and press ACCEPT key	Maintenance station is unlatched	Move Maintenance station forward, latch, and press ACCEPT key
	Defective or misaligned Maintenance Station switch	Contact RGI Customer Service
	Defective Driver Board	Contact RGI Customer Service
Close All Doors and press ACCEPT key	Door is open	Close all doors and press ACCEPT key
	Defective interlock switch	Contact RGI Customer Service
Waste Bottle Full Change, press ACCEPT	Ink waste bottle is full	Replace or empty waste bottle and press ACCEPT
Blotting Cloth Low ACCEPT key to change	Blotting Cloth is low	Press ACCEPT to change now, press CANCEL to change later
Blotting Cloth Out Change, press ACCEPT	Out of Blotting Cloth	Change Blotting Cloth and press ACCEPT key

Table A-2 Operational Error Messages

Low Ink Status Messages

Low Ink Status Messages come on when there is too little ink to maintain optimal print quality. The INK LOW light on the control panel will go on. The control panel indicates the specific ink needing attention. Check or replace the ink bottle. See ***Table A-3***, Low Ink Status Messages, for one or more messages associated with the low ink status.

When the printer in online (not in menu or error modes), the LCD is used as follows: The top line is used to display supplies status. The approximate amount of media left on the supply roll and the amount of media used (on the take-up roll) is displayed in english or metric units. If any of the ink supply bottles are empty, then the media status is displayed for 4 seconds and 1 or more of the Low Ink Status Messages are displayed for 2 seconds each. The maintenance cloth percent left and drying lamp temperature status are also displayed on the control panel.

PROBLEM(LCD MESSAGE)	DESCRIPTION
Idle*	Printer is idle
DOOR OPEN	Printer is idle but door is open
CANCELLING PRINT	Printer is cancelling a print
PRN: [job name] dd%	Printer has printed dd percent of [job name]
INP: [job name] dd%	Printer has input (parsed) dd percent of [job name]
LPD: [job name] dd%	Ethernet has input dd percent of [job name]
TST: [job name] dd%	Printer has generated dd percent of [test print]

Table A-3 Low Ink Status Messages

* Bottom line message following the "Low Ink: [color]" status.

Checking and Replacing the Fuses

Make sure a qualified electrician is hired to install or move required electrical service for the Arizona DSP. See the Arizona DSP Installation Site Survey or Technical Specifications for proper power requirements for North America or International setup. If the printer is without power, check the local supply voltage and verify that the voltage is set correctly.

The DIN Rail contains several fuses to protect the printer. If the printer does not respond when you turn the power on, open the pivoting DIN Rail sheet metal cover and check the fuses. Be sure to remove the power cord and read all warning labels before inspecting fuses. Follow these steps to change the DIN Rail fuse(s):

1. Make sure that the power cord is unplugged from the wall and from the power connector on the printer. ***Figure A-1***, Power and I/O Connections, shows the power connections and power plug.

2. Refer to ***Figure A-2***, Opening the DIN Rail. Remove the small kep nut on the DIN Rail cover and pry it open.

3. There are eight fuses stored on the DIN Rail, each located in fuse holders. Fuse locations are shown in ***Figure A-3***, AC Power & Fuse Type. Use this figure or label found on the printer to correctly identify and replace fuse types.

4. To check fuses at F1, F2, F3, F4 and F7, carefully untwist the black threaded caps with your fingers and check them for continuity with an ohmmeter. If fuses are bad, replace it with a fuse of the same value.

5. To check fuses at F5 and F6, carefully pull the level towards the access door to reveal the two fuses and check them for continuity with an ohmmeter. If fuses are bad, replace it with a fuse of the same value.

6. To check the fuse at SSR2, carefully pry it out with a small screwdriver blade and check for continuity with an ohmmeter. If fuse is bad, replace it with a fuse of the same value.

7. Replace the DIN Rail sheet metal cover and kep nut.

8. Plug printer back in and Power on. If a fuse fails again, do not attempt further repairs; call Raster Graphics Customer Service at 1-800-764-0999.

If These Problems Persist

These problems should be fixed by the procedures given. If you can't continue printing after fixing one problem, another problem may have been masked by the first problem.

- Check for open doors and media tears.
- Ensure that all mechanical components are secured and seated properly.
- Remove any obstructions.
- Check to see if the safety interlocks are functioning.
- Turn the printer off for 60 sec., then turn it on again.

If you still get problem indications, the printer diagnostic software may be at fault and contact your service representative.

If You Cannot Clear the Error

If you cannot resolve the error, call Raster Graphics Customer Service at 1-800-764-0999.

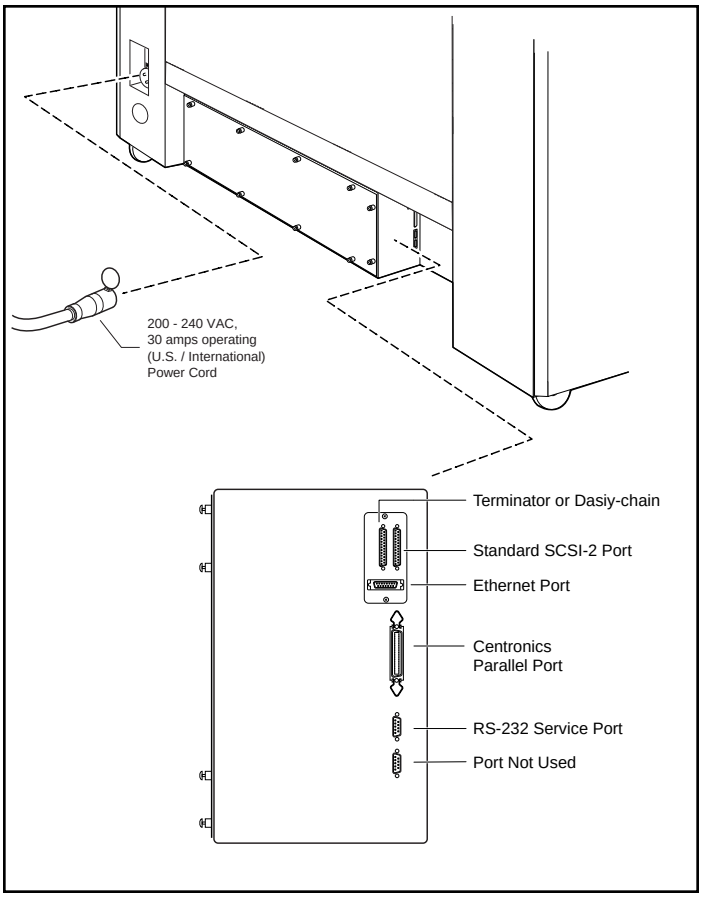


Figure A-1 Power and I/O Connections

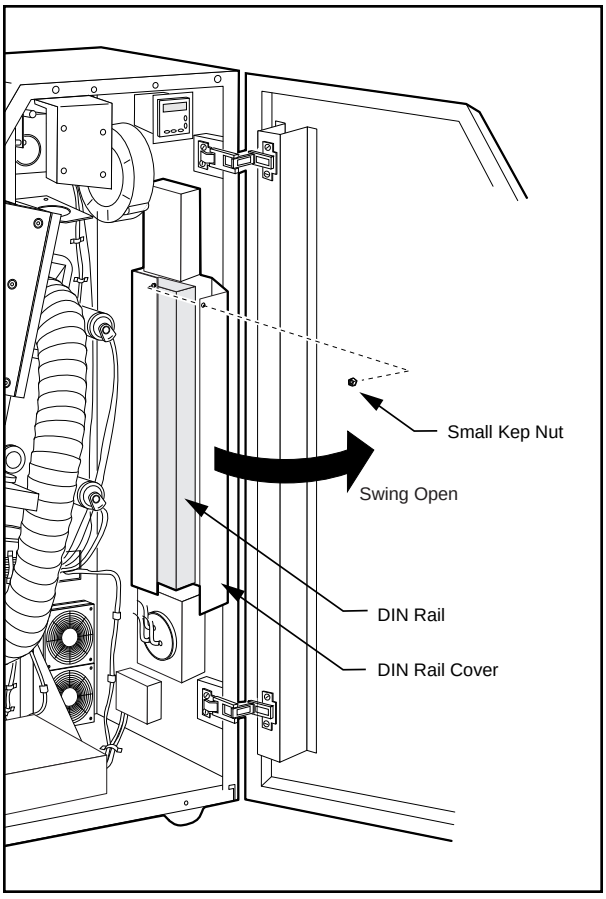
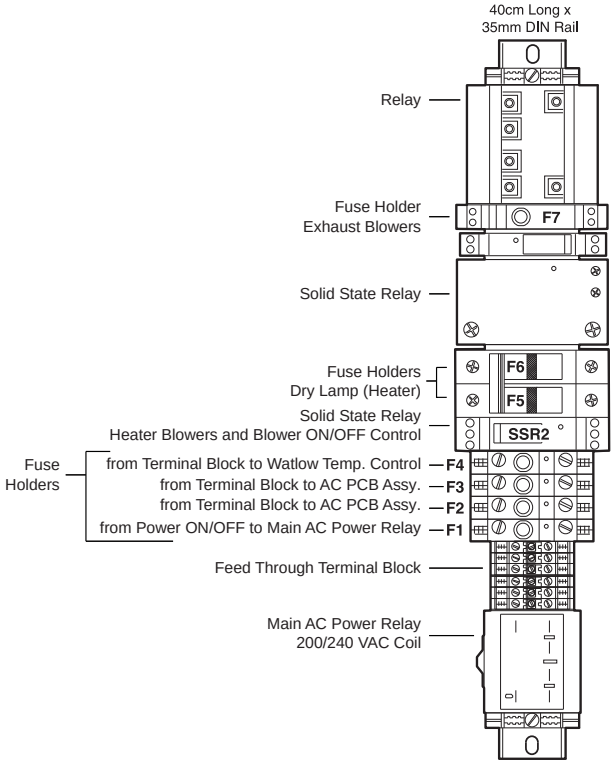


Figure A-2 Opening the DIN Rail



Digital Screen Press Arizona AC-Power Relay & Fuse Type

LOCATION	FUSE INFORMATION & RGI PART NUMBER
F1 (Fuse 1)	Fuse .032A 250V 5X20mm Fast-Acting (Part Number: 0114-0025)
F2 (Fuse 2)	Fuse 3.15A 250V 5X20mm Time Delay (Part Number: 0114-0011)
F3 (Fuse 3)	Fuse 3.15A 250V 5X20mm Time Delay (Part Number: 0114-0011)
F4 (Fuse 4)	Fuse 1A 250V 5X20mm Fast-Acting (Part Number: 0114-0023)
F5 (Fuse 5)	Fuse 20A 600V 13/32X1.5in Fast-Acting (Part Number: 0114-0027)
F6 (Fuse 6)	Fuse 20A 600V 13/32X1.5in Fast-Acting (Part Number: 0114-0027)
F7 (Fuse 7)	Fuse 5A 250V 5X20mm Time Delay (Part Number: 0114-0028)
SSR2 (Solid State Relay 2)	Fuse 5A 250V 2AG Time Delay Indicating (Part Number: 0114-0029)

Figure A-3 AC-Power & Fuse Type

Serious Errors

Serious Errors are problems that stop the printer completely. Do not attempt to operate the printer until the problem is solved. The message display will give you a description of the error or problem.

What Are Serious Errors?

All errors are serious, but in this context, Serious Errors stop the printer and prevent operation until the error is corrected. Resolving these errors usually involves the intervention of Raster Graphics Customer Service, unless it is as simple as replacing a blown fuse.

Diagnosing and Correcting Serious Errors

The Arizona DSP Serious Error Messages can be broken down into two categories. The categories are:

- Power Up Error Messages
- Operational Failure Messages

Since Serious Errors, in most cases, shut the printer down, the printer itself will tell you what's wrong by displaying an error message on the control panel. Check these common errors using the listed tables and apply the appropriate remedy.

Power-up Error Messages

Power-up Error Messages are detected during the power up self test phase and the printer will halt. Power-up Error Messages are considered Serious Errors and could require Raster Graphics Customer Service to eliminate the problem, see ***Table A-4***, Power-up Error Messages.

PROBLEM(LCD MESSAGE)	POSSIBLE CAUSES	RECOMMENDED ACTIONS
SYSTEM ERROR ILLEGAL INT.	Defective VRC Board	Contact RGI Customer Service
FAULT: type xx subtype xx	Defective VRC Board	Contact RGI Customer Service
LOAD ERROR ready for download	Corrupt software on disk	Reload software
	Defective VRC Board	Contact RGI Customer Service
DOWNLOAD ERROR ready for download	Parallel interface	Check connection, cable, or computer, and then try reloading
	Defective VRC Board	Contact RGI Customer Service
DISK ERROR	Defective Hard Drive	Contact RGI Customer Service
	Bad connection at SCSI connector	Check connection or replace connector
	Defective add-on board	Contact RGI Customer Service
	Defective SCSI terminator	Replace SCSI Terminator
SYSTEM ERROR NMI	Defective VRC Board	Replace VRC Board
INSUFFICIENT MEMORY	Memory Modules	Contact RGI Customer Service
	Defective VRC Board	Contact RGI Customer Service
BAD DRAM	Defective Memory Modules	Contact RGI Customer Service
	Defective VRC Board	Contact RGI Customer Service
SYSTEM ERROR RAS error:nn	Defective Memory Modules	Contact RGI Customer Service
	Defective VRC Board	Contact RGI Customer Service
SYSTEM ERROR CAS error:nn	Defective Memory Modules	Contact RGI Customer Service
	Defective VRC Board	Contact RGI Customer Service
SYSTEM ERROR DRAM FAILURE	Defective Memory Modules	Contact RGI Customer Service
	Defective VRC Board	Contact RGI Customer Service

Table A-4 Power-up Error Messages

Operational Failure Messages

Operational Failure Messages are detected during printer initialization or during normal operation. The printer will stop all motion and halt. Check the printer firmware version, host computer and/or server, printer data cables and SCSI terminator when printer fails to respond before placing a service call. Operational Failure Messages are considered Serious Errors and could require Raster Graphics Customer Service to eliminate the problem, see ***Table A-5***, Operational Failure Messages. Table A-6 is two tables and continues on to the next page.

PROBLEM(LCD MESSAGE)	POSSIBLE CAUSES	RECOMMENDED ACTIONS
SYSTEM ERROR* OUT OF MEMORY	Defective or not enough memory modules	Contact RGI Customer Service
	Defective VRC Board	Contact RGI Customer Service
	Internal error in software	Contact RGI Customer Service
pSOS error:xxx	Internal error in software	Contact RGI Customer Service
UNKNOWN DISK TYPE	Disk drive not supported by unit	Contact RGI Customer Service
	Defective VRC Board	Contact RGI Customer Service
SCSI PORT FAILED	SCSI option not detected but selected	Contact RGI Customer Service
	Defective SCSI Board	Contact RGI Customer Service
	Defective VRC Board	Contact RGI Customer Service
SCSI TERMINATOR	Defective SCSI Terminator	Contact RGI Customer Service
	Defective SCSI Board	Contact RGI Customer Service
	Defective VRC Board	Contact RGI Customer Service
DSP INPUT TIMEOUT	Error communicating with DSP Board	Contact RGI Customer Service
	Defective Driver Board	Contact RGI Customer Service
	Defective VRC Board	Contact RGI Customer Service
DSP OUTPUT TIMEOUT	Error communicating with DSP Board	Contact RGI Customer Service
	Defective Driver Board	Contact RGI Customer Service
	Defective VRC Board	Contact RGI Customer Service
DSP DOWNLOAD FAILURE	Error communicating with DSP Board	Contact RGI Customer Service
	Defective Driver Board	Contact RGI Customer Service
	Defective VRC Board	Contact RGI Customer Service
DSP STATE SEQUENCE	Internal error in software	Contact RGI Customer Service
STEPPER MEMORY ERROR	Defective Driver Board	Contact RGI Customer Service
STEPPER MEM FAILURE	Defective Driver Board	Contact RGI Customer Service
PAPER STEPPER FAIL	Motor wired wrong	Contact RGI Customer Service
	Any motor has failed.	Contact RGI Customer Service
	Any fan assembly failed or shorted.	Contact RGI Customer Service
	Blown F2, 8A fuse in Power supply PCB	Contact RGI Customer Service
	Defective connector	Contact RGI Customer Service
	Defective Driver Board	Contact RGI Customer Service
	Defective Encoder	Contact RGI Customer Service
	Defective Stepper motor	Contact RGI Customer Service
CAPPING STATION ERROR	Defective capping station switch	Contact RGI Customer Service
	Switch not aligned correctly	Contact RGI Customer Service
	Not enough air pressure - 15 PSI	Contact RGI Customer Service
	Defective air cylinder	Contact RGI Customer Service
	Pinched air tube	Contact RGI Customer Service
	Defective Driver Board	Contact RGI Customer Service

Table A-5 Operational Failure Messages (*Continued on next page*)

* The top line of the LCD will always display "SYSTEM ERROR" for Operational Failure Messages.

Operational Failure Messages *Continued*

Operational Failure Messages are detected during printer initialization or during normal operation. The printer will stop all motion and halt. Check the printer firmware version, host computer and/or server, printer data cables and SCSI terminator when printer fails to respond before placing a service call. Operational Failure Messages are considered Serious Errors and could require Raster Graphics Customer Service to eliminate the problem, see ***Table A-5***, Operational Failure Messages *Continued*.

PROBLEM(LCD MESSAGE)	POSSIBLE CAUSES	RECOMMENDED ACTIONS
SYSTEM ERROR* AIR PRESSURE FAIL	Defective Air Pump	Contact RGI Customer Service
	Defective or misaligned pressure sensor	Contact RGI Customer Service
	Defective Driver Board	Contact RGI Customer Service
	Pinched tube going to air tank	Check all air tubing to and from air tank
	Leaks around air tank	Contact RGI Customer Service
	Missing Valve tree o-ring	Contact RGI Customer Service
CARRIAGE SPEED ERROR	Lower rail endcap and 0-rings adjusted improperly	Contact RGI Customer Service
	Set screw on lower rail Assy may be hitting carriage sensor	Contact RGI Customer Service
	Defective Carriage motor	Contact RGI Customer Service
	Defective Driver Board	Contact RGI Customer Service
	Supply tubes in igus are catching on carriage	Contact RGI Customer Service
TAKEUP MOTOR/ENCODER	Defective Takeup motor	Contact RGI Customer Service
	Defective Driver Board	Contact RGI Customer Service
SUPPLY MOTOR/ENCODER ERROR	Defective Encoder	Contact RGI Customer Service
	Defective data cable	Contact RGI Customer Service
	Defective VRC Board	Contact RGI Customer Service
	Defective Driver Board	Contact RGI Customer Service
	Defective Supply motor	Contact RGI Customer Service
LOWER LCA FAILURE	Defective VRC Board	Contact RGI Customer Service
UPPER LCA FAILURE	Defective or pinched Carriage cable	Contact RGI Customer Service
	Defective or pinched VRC head cable	Contact RGI Customer Service
	Defective Carriage Board	Contact RGI Customer Service
	Defective VRC Board	Contact RGI Customer Service
	If all else fails, recycle power on printer	
(color) SENSOR ERROR	Defective Ink reservoir	Contact RGI Customer Service
	Defective Carriage Board	Contact RGI Customer Service
	Defective or pinched Carriage Board cables	Contact RGI Customer Service
(color) FILL ERROR	Possible reservoir overfill	Contact RGI Customer Service
	Defective pump	Contact RGI Customer Service
	Fill time out set too short	Verify fill time out to be at least 45 seconds
	Clogged manifold	Contact RGI Customer Service
	Leak in supply tube	Contact RGI Customer Service
	Supply tubing not connected	Contact RGI Customer Service

Table A-5 Operational Failure Messages *Continued*

***** The top line of the LCD will always display "SYSTEM ERROR" for Operational Failure Messages).

Non-error Message Problems

Non-error Message problems are errors that occur without any description on the control panel display. Do not attempt to operate the printer until the problem is solved. There are eight troubleshooting tables listed on the following pages with possible remedies for each problem encountered. Determine the malfunction first and locate the appropriate table.

Diagnosing and Correcting Non-error Messages

The Arizona DSP Non-error Message Problems can be broken down into eight categories and they are:

- Power Up Problems
- Print Head Problems

Since Non-error Message Problems, in most cases, disable the printer, it is the job of the operator to determine and resolve the printer problem. Check the control panel display for any uncharacteristic information when an error occurs and locate the item that best fits the problem on the listed tables and apply the appropriate remedy.

Power Up Problems

Power Up Problems occur during the power up self test phase during normal operation or when servicing the printer from a external source. These errors could require Raster Graphics Customer Service to eliminate the problem. Look on this page to utilize ***Table A-6***, Power Up Problems.

PROBLEM	POSSIBLE CAUSES	RECOMMENDED ACTIONS
At power up, none of the motors work	Motion is off	Contact RGI Customer Service
	Blown fuse on Power Supply	Check and/or replace fuse - verify fuse rating
Power up unit, hangs with date showing on control panel	Unit is hooked up serial to computer	Reconnect unit to proper port and turn printer off, then on again
No power at power up	Missing AC power line fuse	Check and/or replace fuse - verify fuse rating
	Blown AC power line fuse	Check and/or replace fuse - verify fuse rating
Print starts and Carriage moves to left on first pass and stops	Encoder Strip dirty	Clean Encoder Strip
	Bad Encoder Sensor	Contact RGI Customer Service
	Encoder Sensor installed backwards	Contact RGI Customer Service
	Broken wire on Encoder Sensor	Contact RGI Customer Service

Table A-6 Power Up Problems

Print Head Problems

Print Head Problems are problems associated with the print heads themselves or the nozzles. If an image appears to be light or faded on all colors, try purging adequately or adjust the contrast setting in the control panel first.

In many cases, the Print Heads might not fire properly, use the Test Prints in the control panel to help you determine the problem with the Print Heads or problems with parts leading to the them. Print Head Problems may or may not require a Raster Graphics service representative to eliminate the problem, see ***Table A-7***, Print Head Problems.

PROBLEM	POSSIBLE CAUSES	RECOMMENDED ACTIONS
While printing solid bars, print head printed beyond print area	Defective Carriage Head PCB Board	Contact RGI Customer Service
	Defective print head	Contact RGI Customer Service
	Defective Head Data Cable	Contact RGI Customer Service
Any or all print heads won't print	Defective Head Data Cable	Contact RGI Customer Service
	Defective SCSI Board	Contact RGI Customer Service
	Defective VRC Board	Contact RGI Customer Service
	Defective Driver Board	Contact RGI Customer Service
Prints light or faded on all colors all the way across print	Power Supply set at lower voltage than 42V(+/- .5V)	Contact RGI Customer Service
	Head voltages have not been set or set incorrectly	Check head voltage settings on Configuration print
		Contact RGI Customer Service
	Defective Driver Board	Contact RGI Customer Service
Nozzles out during printing	Capping station needs adjustment	Contact RGI Customer Service
	Maintenance station needs adjustment	Contact RGI Customer Service
	Inadequate purge	Check air tubes, one way valves, capping station, and waste bottle
	Air ingestion	Check for leaks in valves and tubing
	Ink low - air in supply tubes	Replace ink bottle and/or purge air out of ink tubing
	Defective print head	Purge print head or replace
	Leak on ink pump	Contact RGI Customer Service
	Leak in one-way valve on supply line	Contact RGI Customer Service

Table A-7 Print Head Problems

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Capping Station, Carriage Front Plate, and Print Head Cleaning Procedure

Date: 3/2/99

Scope: to properly clean ink and ink buildup from the Capping Station, Carriage Front Plate and Print Head Nozzles on the Arizona DSP. This cleaning procedure should be done each day before installation of media and before large print runs. Isopropyl alcohol and Butyl Gloves (0505-0273) will be used with a lint-free cloth (0505-0283) on the Capping Station only. A specified quantity of 3M Scotchcal CGS-80 (CGS-80) (3000-0057), Butyl Gloves and will be used with a lint-free cloth on the Carriage Front Plate only. A specified quantity of CGS-80 will be used with a Raster Graphics supplied Swabs (0505-0278) on the Print Head Nozzles only. A respirator should be used during each cleaning procedure.

Cleaning the Capping Station Seals

1. Position the Carriage Assembly for access by using the Operator Maintenance menu on the control panel. Open the right equipment bay door and locate the Capping Station Seals as shown in **Figure 1 & 2**.
2. Put on protective gloves before handling the 3M ink residue.
3. Apply isopropyl alcohol on a lint-free cloth and begin cleaning the Capping Station Seals as shown in **Figure 3**. Wipe away all ink stains from the entire face of the Capping Station and well inside the nozzle purge covers.
   Important! Don't reuse the lint-free cloth soaked with 3M ink on any other surface or part of the printer.

Cleaning the Carriage Front Plate

1. Lift the Front Clear Plexiglas door on the Arizona DSP.
2. Use the Operator Maintenance menu to move the Carriage Assembly over to the Maintenance Cloth Station.
3. Retract the Maintenance Cloth Station to expose the Print Heads and Carriage Front Plate as shown in **Figure 4 & 5**.
4. Continue using the protective gloves when handling the 3M ink residue.
5. Apply CGS-80 on a lint-free cloth and gently wipe away ink stains or ink buildup from the Carriage Front Plate as shown in **Figure 6 & 7**.

Cleaning the Print Head Nozzles

1. Setup the Swabs and a container of CGS-80 supplied with the printer as shown in **Figure 8**. A single container of CGS-80 and one Swab per row of Print Heads is recommend. Reuse CGS-80 filled containers until they become very dirty.
   Warning! Never use isopropyl alcohol on the Print Head Nozzles.
2. Dip a clean Swab into the container of CGS-80.
   Note: each Swab has a seam that will damage the Print Head Nozzle; use the semi-curved foam sides of the Swab.
3. Inspect the yellow row of Print Heads (total of three). Look for ink buildup on the nozzle non-wetting-coating surface as shown in **Figure 5**. Any buildup will prevent the Print Heads from firing ink droplets accurately, or not at all.
4. Apply the Swab with CGS-80 thoroughly onto the nozzle surface while gently moving the Swab back and fourth to free the ink buildup as shown in **Figure 9**.
   Important! Don't force the Swab against the Print Head Nozzles, it will scratch this surface.
5. Dip the Swab into the container of CGS-80 again and wipe the nozzle surface in one direction from top to bottom until visibly clean of ink as shown in **Figure 10**.
   Important! Don't force the Swab against the Print Head Nozzles, it will scratch this surface.
6. Repeat steps 3, 4 and 5 for each color beginning with yellow working your way down to Black for a total of 18 Print Heads. Use a new Swab for each row of Print Heads and never mix a stained Swab with other colors.
7. Store CGS-80 containers and unused cleaning items for next scheduled cleaning.
8. Latch the Maintenance Cloth Station and return the Carriage Assembly to the home position using the control panel.
9. Install media and run a test print to verify all nozzles firing and quality acceptance.

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U.S. Toll Free: 1-800-441-4788 **Service Direct**: 1-800-764-0999 **Service Fax**: 1-408-232-4101 http://www.rgi.com/

Figure 1

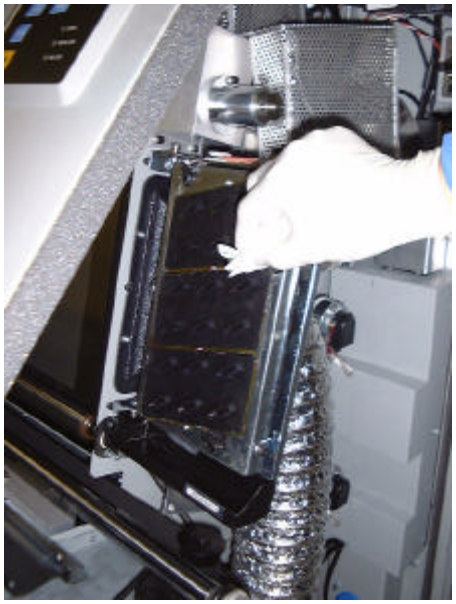

Figure 2

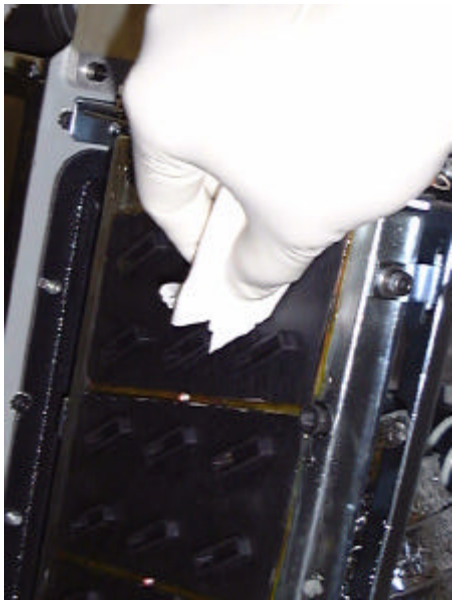

Figure 3

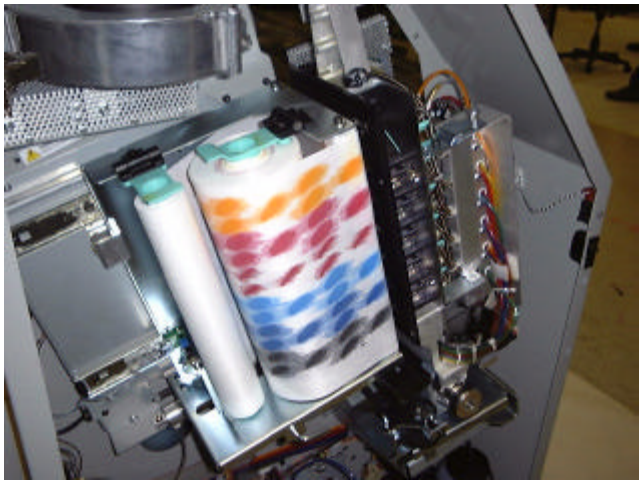

Figure 4

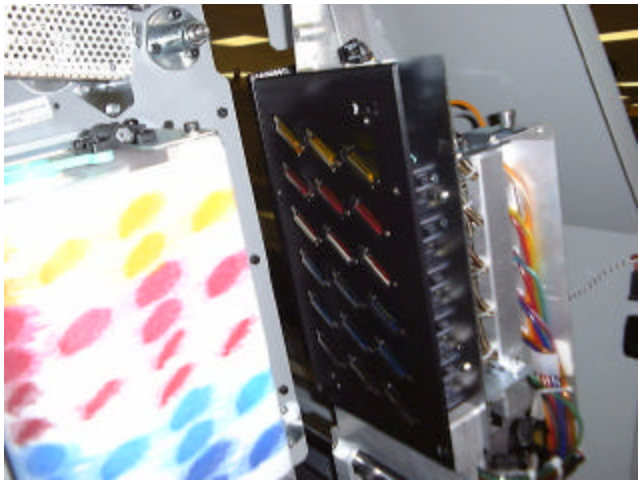

Figure 5

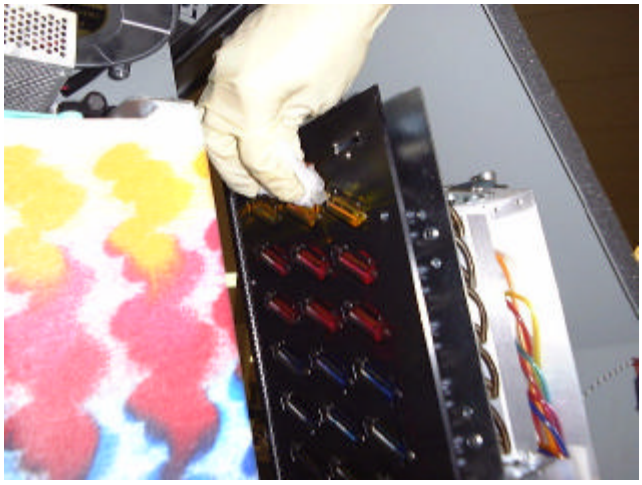

Figure 6

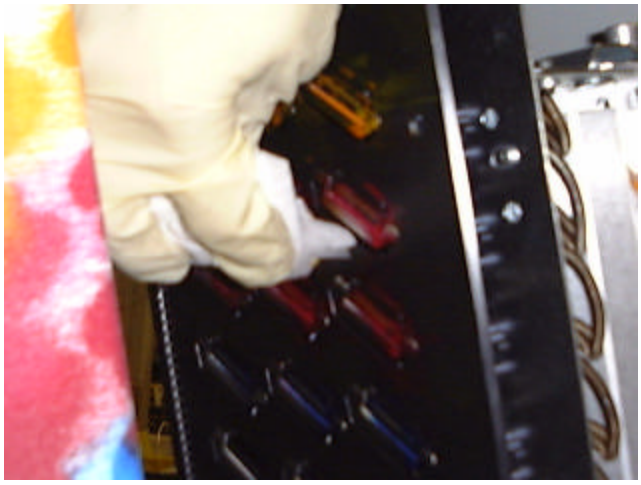

Figure 7

Figure 8

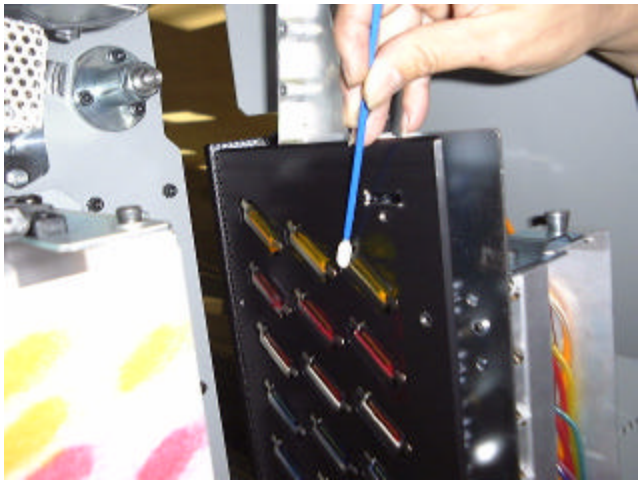

Figure 9

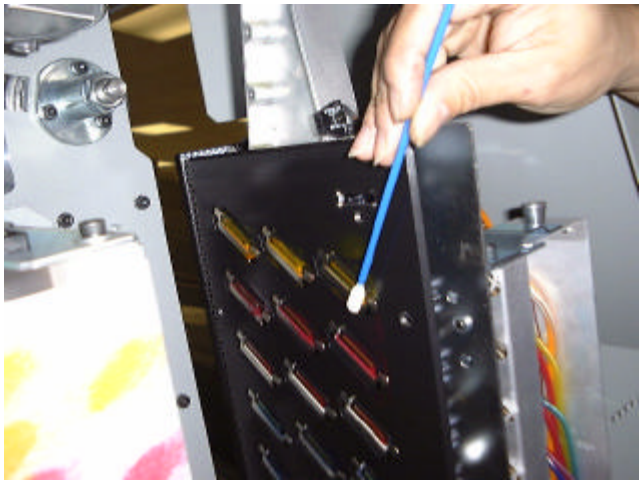

Figure 10

Exhaust Air Manifold Setup Procedure

Revision Date: May 16, 2001 Original Release Date: November 2, 2000

Scope: this procedure is required to check the setup of the Arizona DSP Air Manifold ventilation system. The ink fumes and warm air generated by the heating element will need to be directed away from the printer. The operator is required to wear the proper mask when initially setting up the printer ventilation system. To use and get an accurate reading on the Anemometer, a print job must be started to get the Air Manifold Blowers running and the printer to operating temperature. Follow the steps below to properly setup the ventilation system.

Exhaust Air Manifold Pre Setup Procedure

1. Measure the four (4) inch diameter duct at the customer site with the Vacuum Gauge (0401-0096) for two (2) inches of water (minimum) as shown in **Figure 1**.
2. Insert the Vacuum Gauge tube into the duct as shown in **Figure 2**.
3. Cover opening with hands as shown in **Figure 3**. Record the vacuum/air pressure reading as shown in **Figure 4**.
4. Measure the airflow at the mouth of the duct with the Hot Wire Anemometer (407123). Hold this devise at center of duct. The airflow range reading on the Hot Wire Anemometer should be between 2200 - 4000 feet per minute as shown in **Figure 5**.

Airflow Adjustment Steps

1. Once the Arizona DSP has been prepared for printing, the Air Manifold Assembly will require a user-supplied 4-inch diameter duct to be installed as shown in **Figure 6**.
2. Locate duct and slide it over the cylinder extending from the Air Manifold Assembly. Note the small hole on the cylinder extending from the Air Manifold. The duct should be slid up to this hole, but should not cover it as shown in **Figure 7**.
3. Ready the Hot Wire Anemometer (Model 407123), power it on, press UNIT until it reads ft/min and calibrate with the wire sensor protector in place.
4. Tape the wire sensor protector in position exposing the wires at the end of the Anemometer.
5. Insert Anemometer all the way into the small hole. Continue inserting until it stops with the sensing wire perpendicular to the airflow as shown in **Figures 8 & 9**.
6. Lock the sheet metal slider handle (if installed) at the full open position on the Air Manifold as shown in **Figure 10**.
7. Let the temperature stabilize by printing for 20 to 30 minutes allowing the internal ambient air to warm to operating temperature. Check airflow at manifold with the Hot Wire Anemometer for between 2200 - 3000 feet per minute. Continue monitoring the airflow reading for several minutes to ensure non-fluctuation as shown in **Figure 11**.
8. Remove Anemometer and slide ducting several more inches coving the small hole. Procedure is complete; you may now begin printing.

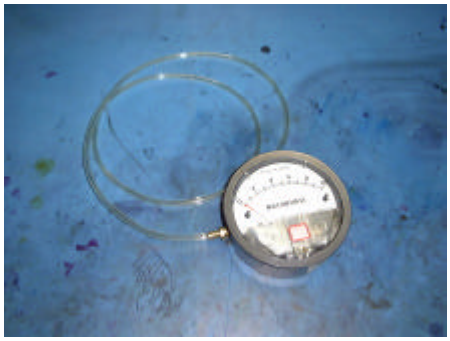

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

Figure 6

Figure 7

Figure 8

Figure 9

Figure 10

Figure 11

Heat Lamp Replacement Procedure (P/N: 3000-5500)

Revision Date: 3/8/01 Original Release Date: 3/2/99

Scope: to correctly remove/install the Heat Lamp, also known as the Drying Lamp, on the Arizona DSP if it becomes damaged or inoperable. Use the extra Heat Lamp shipped with the printer in place of the damaged one.

Tools: Standard Tool Kit (8mm Box Wrench, M5 T-wrench and 10/32 wrench)

Parts Required: Heat Lamp (P/N: 3000-5023), Isopropyl Alcohol, a Lint-Free Cloth and Cotton Gloves

Replacing the Heat Lamp

1. Confirm that the Heat Lamp is inoperable before powering off the Arizona DSP.
2. **Power off the printer and unplug it. Note: if recently operated, allow the Heat Lamp to reach room temperature before moving on to the next step**.
3. Open the left equipment bay door and locate the Left Lamp Termination Post Cover (PN 3000-4100). (**Figure 1**)
4. Remove the two kep nuts (0303-0003) and Washers (0302-0082) from the left side of cover. (**Figure 2**)
5. Remove the cover gently so as to not catch it on the underlying wires. (**Figure 3**) Note: when removing this cover, two interlock switches are turned off disabling or terminating all current to the Heat Lamp. (**Figure 4**)
6. Remove the last nut (0303-0039) from the end of the Lamp Termination Post and pull the white Heat Lamp wire away from the Lamp Termination Post. (**Figure 5**)
7. Open the right equipment bay door and locate the Right Lamp Termination Post Cover (PN 3000-4099). (**Figure 6**)
8. Remove the four socket head screws (0301-0068) and washers (0302-0082) from the Right Lamp Termination Post Cover. (**Figure 7**) Note: when removing this cover, two interlock switches are turned off disabling or terminating all current to the Heat Lamp. (**Figure 8**)
9. Remove the last nut (0303-0039) from the end of the Lamp Termination Post and pull the white Heat Lamp wire away from the Lamp Termination Post. (**Figure 9**)
10. Proceed to left access door and pull the Aluminum Cap Tube (3000-4031) off the left Heat Lamp side (also known as the white ceramic end of the Heat Lamp). (**Figure 10**)
11. Put protective cotton gloves on. Remove the Heat Lamp gently from the left equipment bay so as not to catch the wires on any slots within the aluminum tube used for guiding the airflow. (**Figure 11**)
12. While still wearing the protective cotton gloves, clean the new Heat Lamp with a lint-free cloth and Isopropyl Alcohol.
13. Install the new Heat Lamp slowly through left equipment bay. Make sure the wires on either end of the new Heat Lamp are straight. (**Figure 11**)
14. Place the Aluminum Cap Tube (3000-4031) over the white ceramic end of the Heat Lamp. (**Figure 10**)
15. Attach the Heat Lamp end wire to the right termination post (**Figure 9**) and read the following important warning.

    Warning! Move the takeup dancer assembly from the lock position to the full out position several times while observing the clearance between the heat lamp wire and the takeup dancer cable assembly. There must be a minimum distance of 3/16 inches (4.8 mm) between them. (**Figures 12 and 13**)

16. Attach the Heat Lamp end wire to the left termination post. (**Figure 5**)

    Warning! Do not bend the Heat Lamp end wires unless absolutely necessary. The wires can break very easily where they attach to the heater core; maneuver them gently when attaching to posts.

17. After end wires have been attached to posts, make sure there is ample clearance with the ceramic spacers on the spring steel and the cover assembly.
18. Reattach the left and right Heat Lamp covers.
19. Plug the Arizona in and power on the printer.

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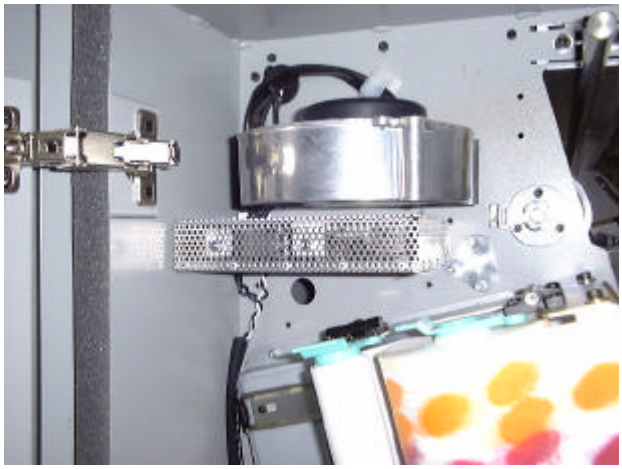


Figure 1

Figure 2

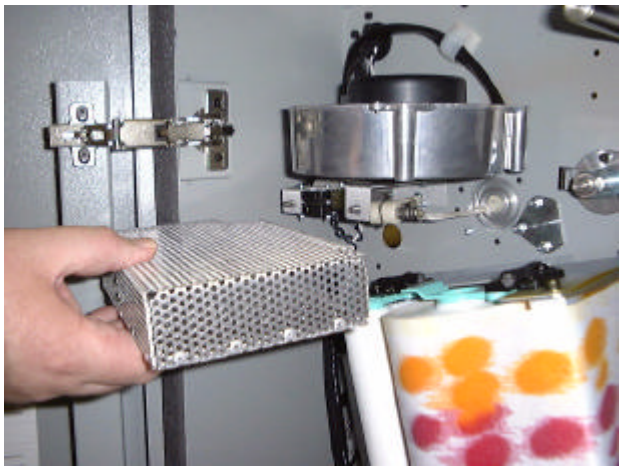


Figure 3

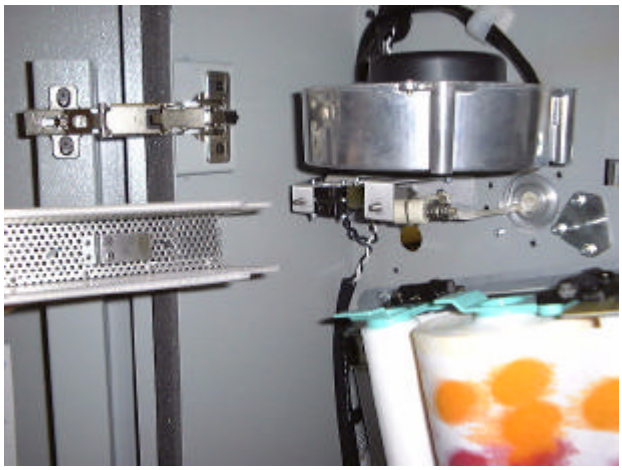


Figure 4

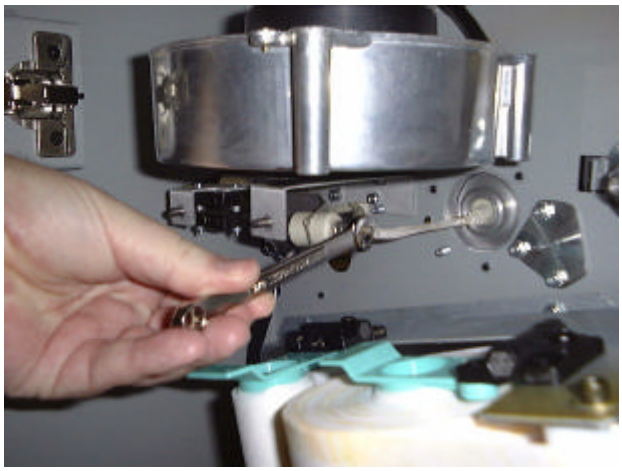
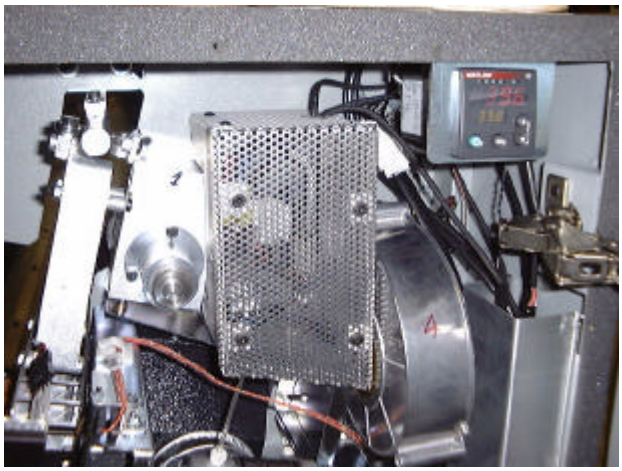


Figure 5



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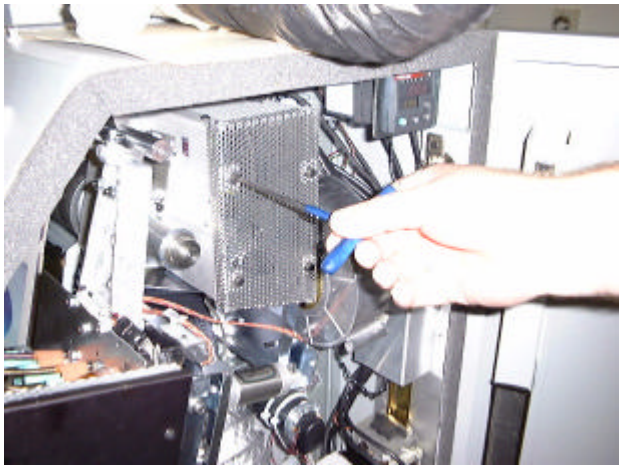

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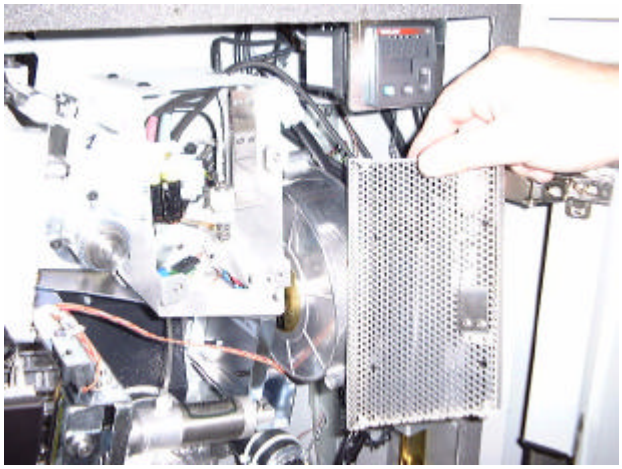

Figure 8

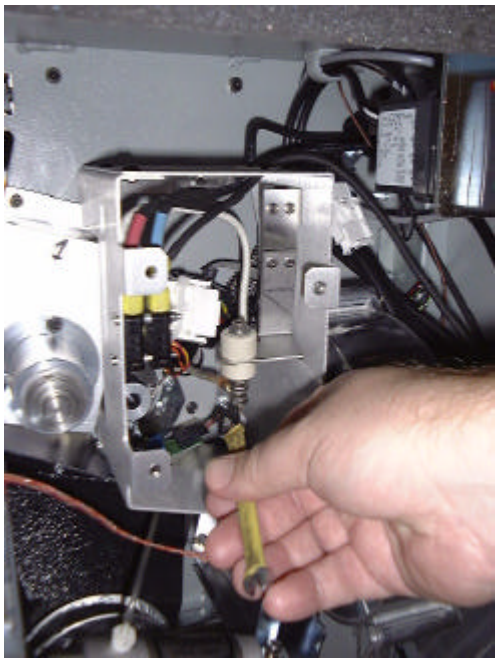

Figure 9

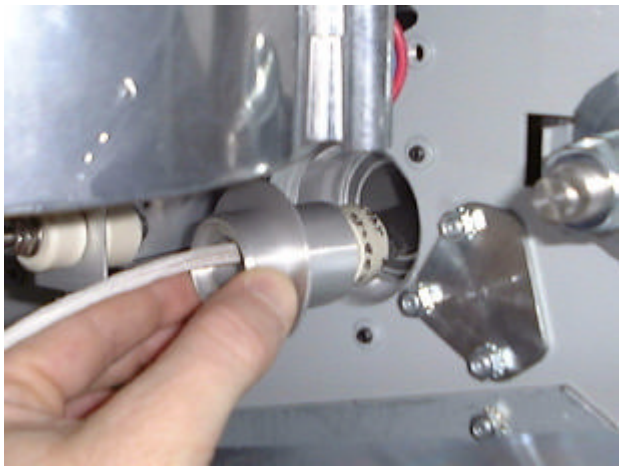

Figure 10

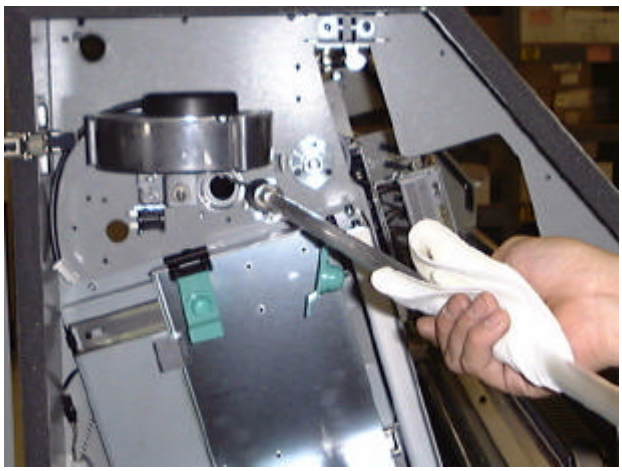

Figure 11

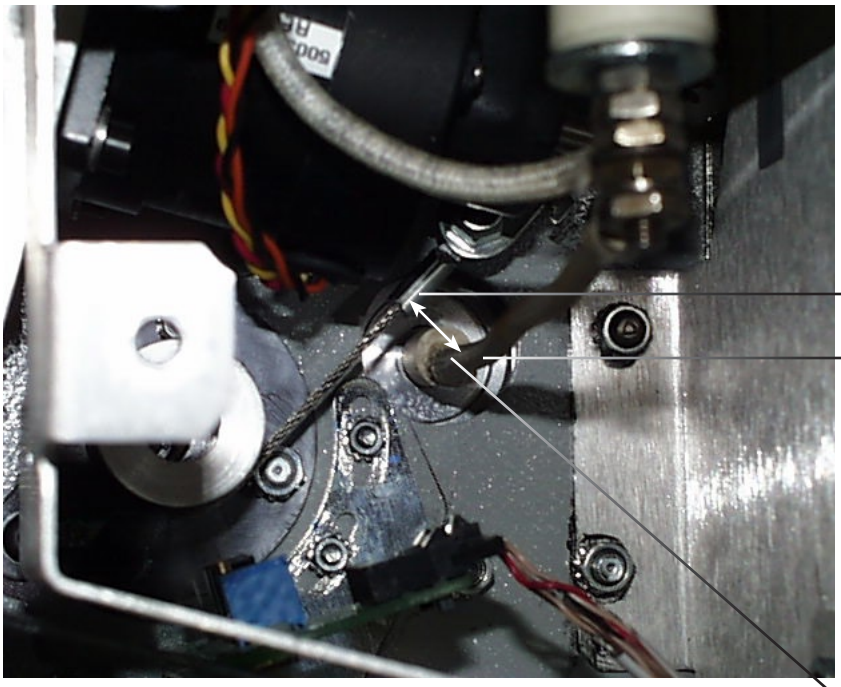

Figure 12 Takeup Dancer in Locked Position

Warning! There must be a minimum distance of 3/16 inches (4.8 mm) between the takeup dancer cable assembly and the heat lamp wire.

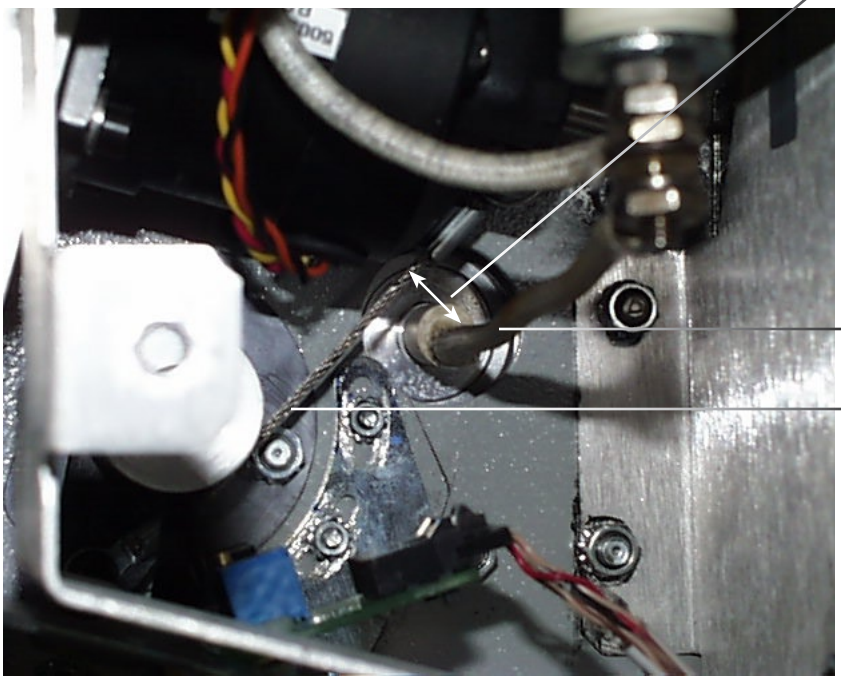

Figure 13 Takeup Dancer in Full Out Position

Released: Month Day, 2001

Ink Reservoir Vent Hole Clearance Procedure

Date: 3/2/99

Scope: this procedure is required for proper clearance of each Ink Reservoir Vent Hole on the Print Head Carriage Assembly. The Ink Reservoirs are also known as Juice Boxes and can be accessed using the Operator Menu on the control panel. Over a period of two weeks, the vent holes diameter begins to decrease in size and require a special tool to clear the hole of ink buildup. The vent hole must be cleared in order to prevent "super purges" or ink waste during normal print head primes through the control panel. Follow the steps below for clearing each Ink Reservoir Vent hole.

Clearing the Ink Reservoir Vent Hole

1. Position the Print Head Carriage Assembly for access by using the Operator Maintenance menu on the control panel.
2. Lift the Front Clear Plexiglas door on the Arizona DSP.
3. Locate the Vent Hole Clearing Tool (3000-5038) as shown in **Figure 1**.
4. Inspect each Ink Reservoir cap vent holes for clearance. Start with the Yellow and work down to the Black Ink Reservoir.
5. Proceed to gently push and twist the Vent Hole Clearing Tool down through the small existing hole on the Ink Reservoir cap as shown in **Figure 2**.
6. Continue to push and twist the tool to approximately 0.25 inch deep. Do not attempt to increase the size of the hole by manipulating the cleaning tool.
   Warning! The pin is extremely fragile and must be kept in-line when increasing the diameter of the vent hole.
7. Twist the Vent Hole Tool back out of the Ink Reservoir cap.
8. Inspect vent hole caps and clear any loose material created from the clearing process.
9. The procedure is complete. Park the Pint Head Carriage using the control panel.

Figure 1

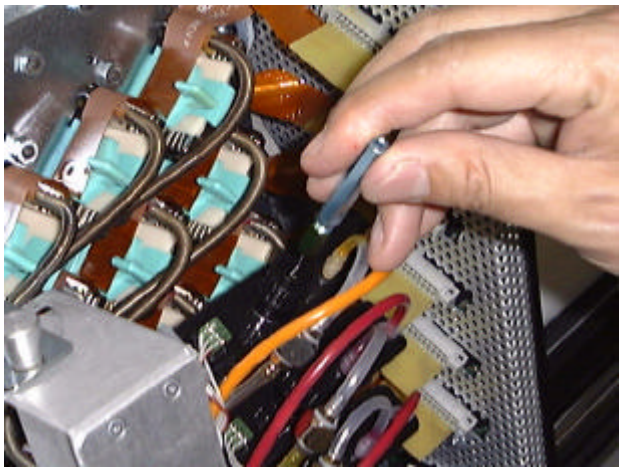

Figure 2

Media Setup Specifications

Date: 2/24/99

Media Type (Offered by RGI Only) Supply/Takeup Core Setup: Std 3.25"	Part No.	Width	Length	Thickness	Print Temp	Print Time
Indoor/Outdoor Poster Grade Paper	3000-0402	54"	150 ft.	9.9 mils	42 degC	1.5 in. sec.
Reinforced Indoor Banner Paper	3000-0403	54"	150 ft.	9.7 mils	42 degC	1.5 in. sec.

Offered by RGI / 3M Distributors Supply/Takeup Core Setup: 3M 3.50"	Part No.	Width	Length	Thickness	Print Temp	Print Time
3M Controltac RG180-10	3000-0405	54"	50 yds.	10.2 mils	45 degC	1.5 in. sec.
3M Changeable Film RG3500	3000-0406	54"	50 yds.	12 mils	Contact RGI	Contact RGI
3M Translucent Film RG3630-20	3000-0407	54"	50 yds.	10 mils	Contact RGI	Contact RGI

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TECHNICAL BULLETIN *MAY 2, 2000*

By Ken Silz & Jorge Carballo
ksilz@rgi.com / jcarballo@rgi.com

EMPTY INK BOTTLE USAGE

Do not, under any circumstances, pour the remaining amount of ink of any ink bottle into another ink bottle of the same color for use in the printer as shown in ***Figure 1***. This applies especially to empty or partially empty ink bottles, as designated by the control panel, where the remaining amount of ink is thicker than a new bottle of ink. Mixing ink increases the chance of poor image quality and clogged ink bottle filters, shown in ***Figure 2***, rendering the printer useless until a new bottle of ink is installed.

ARIZONA DSP TECHNICAL DATA PAGE
http://www.rgi.com/rgi/tech/support/piezoprint/Arizona/Arizona.htm

PIEZOPRINT 5000 TECHNICAL DATA PAGE
http://www.rgi.com/rgi/tech/support/piezoprint/5000/5000.htm

CAROLINA TEXTILE PRESS TECHNICAL DATA PAGE
http://www.rgi.com/rgi/tech/support/piezoprint/5000/5000tx/5000tx.htm

Figure 1

Figure 2